

Matthias Pilz (Ed.)

The Future of Vocational Education and Training in a Changing World

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Introduction

Matthias Pilz

The origins of this book lie in an international conference held in autumn 2010 to mark the foundation of the German Research Centre for Comparative Vocational Education and Training (G.R.E.A.T.) at the University of Cologne. The title of the conference was similar to the title of this book: ‘The Future of VET in a Changing World’.

The Significance of the Title

The examples cited below demonstrate the topicality of, and need for, research into comparative vocational education and training in today’s world. If, for example, we consider the question of parity of esteem between general education and VET, it is clear that in many countries, vocational education is regarded as being of secondary importance or even as inferior. And this is the perception not only of employers, but also of students and their families and of the teaching staff in vocational institutions and higher-level educational establishments.

Taking an international perspective highlights the fact that different countries often have found very different ways of assessing and tackling these problems. In some countries, the problem of parity of esteem is not perceived as particularly pressing because there is lower demand for skilled and qualified employees or because the need for training is met through other, more academic, programmes. Other countries, including some English-speaking countries, face a shortage of skilled workers with intermediate levels of qualification and increasing ‘academic drift’. By contrast, German-speaking countries are internationally renowned for their well-

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educated skilled workforce but have for decades faced problems in enabling those with occupational qualification to progress within the traditional academic educational system.

All these examples demonstrate that, in an international context, it is impossible to gain a full understanding of a problem and its consequences and to start to formulate generally applicable remedies without critical reflection. Avoiding ethnocentrism is important but also perhaps the most serious challenge in moving forward.

This leads on to a second aspect. Research into international comparative vocational education and training not only provides a much better and deeper understanding of other education systems but can also make an often substantial contribution to mutual learning. Take, for example, the debate on modularisation in VET. The discussion in the German-speaking countries could have produced initial results much earlier if the parties involved had taken on board the substantial experience accumulated by the English-speaking countries. Instead, the discussions were criticised for polarisation, producing a stalemate that means we in the German-speaking world are now some ten years behind.

Yet there is also evidence of learning from others. Current efforts to develop national qualification frameworks clearly reflect the long-term experience of other countries. At the same time, however, it is important to emphasise the need for close scrutiny of other education systems so as to avoid a situation in which country-specific experiences are transferred wholesale and inappropriately. Many of you are personally involved in, or at least familiar with, the problems of implementing a national qualifications framework. To take just one example, classifying vocational education programmes in such a framework can often produce a lack of clarity in the definition of reference levels, and the practical benefits are not always commensurate with both the effort and the cost expended.

Moreover, country-specific data can be misinterpreted and wrong conclusions drawn. For example, for many years, the OECD's *Education at a Glance* series has deplored the low number of university graduates in German-speaking countries. Accordingly, every year the recommendation is made to increase graduate numbers by means of targeted educational policy initiatives. And every year, the Minister for Education and other education experts in the countries concerned respond by emphasising the importance of the 'dual' apprenticeship system and the high quality of the training and knowledge it provides.

In summary, then, there are compelling reasons for a comprehensive understanding and interpretation of country-specific characteristics before conclusions are drawn or proposals for reform are formulated. In this context, it is important

also to stress the need to generate international studies involving large-scale assessments in the field of vocational education and training, since there is still a shortage of empirical evidence that the competence level of students with qualifications from the 'dual' system is equivalent to that of students having obtained academic qualifications in many countries.

Another important aspect to be taken into consideration is the active contribution such studies may make to the development of vocational education processes. India, for example, faces a growth in its population of some five million over the next five years, which will produce over a million untrained and under-educated people and a shortfall of real talent. At the same time, the numbers of young Indians trying to secure places at the country's most prestigious universities are increasing. The mismatch between growing demand and the increase in university places means that many young people miss out on an opportunity to go to university. Vocational education and training may be the solution for them.

On the one hand, availability of VET can give young people basic professional qualifications; on the other, it also offers high-level vocational career paths to those who have high potential but have not studied at university. The contributions made by VET are also confirmed by the Indian government, which stresses three main aspects. First of all, VET offers broad prospects to young people; second, VET will provide India with the skilled labour force it needs to fulfil its economic ambitions; and finally, VET can also help to combat rural depopulation.

China, Japan and some western countries, by contrast, represent radically different challenges, in particular the ageing of their societies. In China, for example, the most pressing issue is how VET should be organised to ensure that even if the total number of young people declines, the proportion of students meeting medium-level vocational qualifications standards will increase. In Japan and the western societies, meanwhile, issues facing the VET system include the need for lifelong learning and the need to integrate disadvantaged young people into the education system.

In conclusion, international and comparative approaches to VET will be fruitful only if there is a comprehensive and deep understanding of other countries and their cultures. The prominent educationalist Georg Bereday articulated this 50 years ago when he wrote, 'A long stay in the country to be researched is important. There is no better method to sharpen the view than simply to live among the local people. Someone who can come across a culture in close contact, in thousand daily situations, can gain the feeling for the characteristics of their lives, which can never be learned from merely reading books. This understanding is not only important itself, but also it is a key to choosing the right research method when it comes to analysing the school system. Normally, as a part of the training for all the researchers in comparative education science, one should stay at least one year in a foreign country.'

Structure of the Book

This book brings together a wide spectrum of approaches and methodologies relevant to international comparative vocational education and training. Country case-studies, pure research, approaches to comparison and policy papers demonstrate the sheer diversity of VET systems across the world. Yet this diversity has a distinct origin. It is clear that, compared to general education – which is generally well structured – VET encompasses diverse institutions, actors, vocational education programmes, forms of learning and certification and qualifications. This can be attributed to two factors. First, different countries have differing traditions of vocational education, which may for example be school-based or labour market-oriented. Second, the very mission itself of VET differs from country to country. For example, it may take the form of vocational basic education or vocational orientation or it may span the spectrum from broad vocational initial training to practical training for specialists. And the target group also differs widely: in one country, VET may focus on disadvantaged young people, while in another, it will appeal mainly to the young population in rural areas or may specifically cater for those with good secondary qualifications. It all goes to show that there is no such thing as one single best VET policy; the debate is always about the country-specifics of a VET system and what its main priorities are. Yet it is exactly this diversity that gives rise to many different examples of best practice.

This book is an attempt to make this diversity accessible to the reader by imposing a structure on it. The structure we have opted for comprises four main broad sections. The first section of the book focuses on Anglo-Saxon countries, while the second looks at Asia (including India), and the third includes contributions with an emphasis on Europe. The fourth and final section brings together contributions with a global focus and those that raise theoretical aspects of VET in an international context.

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Anglo-Saxon Countries



Challenges and Opportunities for Technical and Vocational Education and Training (TVET) in the United States

Christopher Zirkle and Lindsey Martin

Introduction

In the United States, formal Technical and Vocational Education and Training (TVET) programs have been a part of the United States educational landscape for almost a 100 years, since the first U.S. federal legislation, the Smith-Hughes Act, was passed in 1917 to approve funding for these programs. In the United States, TVET is an elective form of education that students are not required to participate in to earn a high school diploma or a college/university degree. Historically, TVET has focused on job preparation for entry-level positions and is defined as educational courses and programs offered at less than the baccalaureate level.

About United States TVET

Technical and Vocational Education and Training in the United States is now commonly known as Career and Technical Education (CTE). The title Career and Technical Education replaced ‘vocational education’, which was thought to have many negative perceptions among students, parents, educators and policyholders, and has been a barrier to students enrolling in these courses and programs. This change occurred in 1998 (Association for Career and Technical Education, 2011). For the purposes of this paper, the authors will use the TVET terminology.

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TVET Students

Ninety-six percent of all high school students in the U.S. take at least one TVET course and one in four of all high school students take three or more courses in a single TVET program area (Levesque et al., 2008). One-third of all U.S. college students (4.9 million) are involved in TVET programs, generally in community and technical colleges. In addition, 40 million adults engage in short-term postsecondary occupational training or retraining (Levesque et al., 2008).

TVET Teachers

There were approximately 115,000 TVET teachers in grades 7–12 in the United States in 2009 (U.S. Department of Labor, 2009). These teachers are prepared through two different pathways. The first is based on a traditional route that includes a university degree, such as a bachelor's or master's degree and the second is an alternative pathway that provides pedagogical training (usually through a college or university) for TVET teacher candidates from various industries. There is presently a demand for TVET teachers, especially in areas of new, emerging technology.

TVET Program Areas

There are six broad areas of TVET. These areas are Agricultural Education, Business Education, Family and Consumer Sciences Education, Health Occupations Education, Marketing Education and Trade and Industrial Education.

Agricultural Education

Agricultural education prepares students for careers in agriculture and natural resources. It was one of the original areas funded under the Smith-Hughes Act of 1917, the first federal legislation written in support of vocational/career and technical education. The area of agricultural education includes courses and programs in animal production, food science, agribusiness, horticulture, natural resources, agricultural industrial equipment, green technologies and environmental science. According to the National Council for Agricultural Education (2009), over 800,000 students participate in formal agricultural education instructional programs in grades 7 through adult throughout the 50 states and three U.S. territories.

Business Education

Business education has historically been regarded as having a secretarial/office orientation, but with technological advances many programs are adapting and developing to meet the needs of the workplace. The area of business education now includes courses and programs in administrative office technology, accounting, legal office management, medical office management, business information systems, finance, information technology and business administration and management. Business and computer technology courses are the most common vocational/career and technical education offerings in public high schools.

Family and Consumer Sciences Education

Family and consumer sciences education is another original program area funded by the Smith-Hughes Act and has undergone significant transformation over the years. Since the early 1900's courses originally named domestic science and household arts have evolved to reflect the changing societal needs of individuals, families and communities.

Family and consumer sciences education now has a much broader mission, as defined by their National Standards. As a result of this broad mission, family and consumer sciences education contains programs that have a 'family studies' orientation, and may include courses and programs in subjects like personal development, resource management, life planning and nutrition and wellness. Other programs have a more traditional TVET focus and may include courses and programs in early childhood education and care, fashion, clothing and interior design, culinary arts and hospitality management. Many of the secondary programs also have articulation agreements with post-secondary programs.

Health Occupations Education

The health care sector is now one of the largest industries in the country, and health care is the most common major field of study among students in associate degree programs. As with business education, many of these programs begin at the high school level, with the expectation students will continue on to a 2-year college and complete an Associate Degree. The area of Health Occupations education includes courses and programs in nurse assisting, dental assisting, medical assisting, home health aid, patient care technician, fitness aide and athletic training and medical lab technician.

Marketing Education

The curriculum of marketing education has evolved from early beginnings that focused on providing cooperative training in retail store work to a focus on how

business plan, produce, price, distribute and sell the many products and services demanded by consumers around the world. Over 7,000 high schools in the U.S. offer marketing education courses and programs (Scott and Sarkees-Wircenski, 2008). Cooperative education that allows students the opportunity to participate in job shadowing, field trips and internships, has been a mainstay of marketing education since its beginning. The area of marketing education includes courses and programs in marketing management, e-commerce, acquisition and logistics, travel and tourism and entrepreneurship.

Trade and Industrial Education

Trade and industrial education (also referred to as vocational industrial education, technical education or industrial and engineering education) was the other original TVET program area designated for funding by the Smith-Hughes Act. The area of Trade and Industrial Education covers the broadest range of occupations found in a single TVET program area and includes courses and programs in automotive technology, carpentry, drafting and technical illustration, electrical trades, welding, precision machining, firefighter training and green construction. Many of these programs have been specifically targeted for job preparation since the occupations they cover have not required postsecondary education.

Initially, trade and industrial education programs were focused on entry-level employment, but the changing workplace and technical innovation have altered this mission to focus on postsecondary preparation as well. Programs within trade and industrial education often utilize a cluster approach in addition to specific occupational preparation. These programs and courses require the greatest attention to detail in the classrooms and labs because of the high cost of labs and equipment and the often-hazardous nature of the tools and materials used.

Where Can TVET Courses and Programs Be Found?

TVET courses and programs can be found in a wide variety of educational institutions in the United States. Students may be introduced to some TVET-related courses in the middle grades (6–8), but most of the significant courses and programs within TVET begin in various forms with entrance into high school, which in most states is grade 9.

Comprehensive High Schools

There are approximately 17,000 public and 6,300 private comprehensive high schools in the United States (Levesque et al., 2008). Technical and vocational education and training programs found in comprehensive high schools offer a wide range of courses, from general education to college preparatory, as well as traditional TVET courses. The specific course offerings and programs in these schools reflect the communities in which they are found. Comprehensive high schools in rural areas often emphasize TVET courses and programs in agricultural education and family and consumer sciences education, while schools in urban areas may be focused on programs related to business education, health occupations and marketing education.

Career Centers and Area Vocational Schools

There are approximately 900 high schools that are classified as vocational/career and technical education high schools in the United States (U.S. Department of Education, 2011a). These schools are usually located in large urban areas, such as Boston, Cleveland and New York City, and generally house students in grades 9–12. They are likely to be part of a larger, comprehensive school district which includes many comprehensive high schools as well.

In many states, the concept of ‘area’ vocational schools or career centers has been developed. These schools are designed to serve students from a specific geographical area and from several high schools. The students are usually only in grades 11–12, rather than the 9–12 approach used in vocational/career and technical high schools. Because the schools focus on TVET and serve a large area, they can achieve economies of scale and are able to offer courses and programs to a large number of students that a single comprehensive high school or vocational/career and technical education high school would find cost-prohibitive. Typically, students in these area schools and centers spend one half of the school day in their TVET program area and the other half in academic courses such as math, language arts and natural sciences, that are usually required for graduation from high school.

Job Corps Centers

Job Corps has centers in over 120 locations across the United States and serves more than 100,000 students (U.S. Department of Labor, 2011a). Job Corps centers offer

career development and training services to young men and women ages 16 through 24 to prepare them for successful careers. These individuals may be high school dropouts, or adjudicated youth (under a court's jurisdiction) and are seeking an opportunity to earn a General Equivalency Diploma (GED) or actual high school diploma, along with marketable technical skills. Job Corps centers offer academic courses, vocational training, and teach employability skills and social competencies and primarily focus on programs in the building trades.

Community and Technical Colleges

One-third of all college/university students are involved in TVET programs in 2-year, associate degree-granting institutions (Levesque et al., 2008). In addition, several million adults engage in short-term postsecondary occupational training at these institutions every year. Students can take courses and programs offered at the Associate Degree level as well as a broad range of non-degree offerings, such as continuing education programs, occupational certificate programs and custom designed courses. Many students in 2-year institutions enroll specifically for vocational-technical training, with no desire to earn a degree.

Similar to secondary education institutions, TVET courses and programs at community and technical colleges also tend to reflect the communities in which they are located. In addition, these postsecondary educational institutions continually look for opportunities to expand their mission by entering into partnerships with 4-year universities and comprehensive high schools or vocational/career and technical education high schools through articulation/transfer agreements, providing job retraining opportunities for displaced workers. Two-year institutions have embraced the use of technology to offer courses and programs via distance education methods as a way to expand their reach, especially to older, working adults (Zirkle and Fletcher, 2009). These institutions can be public (funded largely by the state government), private or proprietary (for-profit).

Youth and Adult Prison and Correctional Facilities

TVET programs are offered at prison and correctional facilities to both youth and adults as a way to reduce recidivism, or the tendency of inmates to relapse into a life of crime after release from prison. Vocational training and other special programs designed to train participants for jobs can be found in more than half of state prisons and 90% of federal prisons in the United States (Wolf-Harlow, 2003). Some com-

mon areas of vocational training in these facilities include automobile body repair, electronics, horticulture, masonry, refrigeration servicing and welding (Lewis et al., 2002).

Apprenticeships

While perhaps not as well-developed nor as popular as in other countries, apprenticeships in the United States are a combination of on-the-job training and related classroom instruction that provide workers with the practical and theoretical aspects of a highly skilled occupation. These programs have been in existence since 1937, and are now overseen by the U.S. Department of Labor, which offers apprenticeship programs in a variety of training programs such as carpentry, plumbing and electrical trades. Employer and labor groups, individual employers and/or employee associations jointly sponsor apprenticeship programs. There are currently more than 28,000 active apprenticeship programs serving more than 460,000 apprentices across the country (U.S. Department of Labor, 2011b).

Significant TVET Challenges in the United States

TVET in the United States is currently facing some considerable challenges. For the purpose of this chapter, we will focus on four of these challenges, and then we will follow up with a discussion of the potential opportunities that exist within these challenges. The four challenges are:

- Public perceptions of TVET
- Curriculum issues
- Funding of TVET
- The development, recruitment and retention of quality teachers for TVET programs.

Public Perceptions of TVET

Many parents, educators and policymakers in the United States see TVET as a 'second-class' educational system, only for students who cannot succeed in academic endeavors. At present, there is much focus on the U.S. on a 4-year

college/university education, and TVET is not seen as a pathway to success. As a result, parents tend to focus on 4-year university degrees instead of encouraging their children to pursue TVET courses and programs. In addition, as a result of this mindset, some TVET programs are populated with students who have not been successful in previous academic pursuits and while TVET can be a salvation for some, others still struggle.

Presently in the United States, there is much policymaker focus on accountability and performance of U.S. schools, teachers and students. Until recently there has been a lack of conclusive research evidence as to the benefits of TVET courses and programs at the secondary level, which has only added to negative perceptions of the discipline.

Curriculum Concerns

In the U.S., TVET as an educational discipline lacks a consistent mission or goal. Currently there are multiple missions for TVET, including a focus on entry-level job preparation, adult retraining programs, college/university preparatory coursework, postsecondary options and 'second-chance' opportunities for individuals convicted of crimes, or for high school dropouts. Meeting the needs of these multiple missions is a difficult task for TVET as a whole.

In addition, there is an increasing emphasis on the traditional academic disciplines within the United States secondary educational system, as a result of the singular focus on a college/university education. This is contributing to the detriment of TVET. In the U.S. secondary school system, students have limited opportunities to take TVET courses as their school schedules must include more math, natural science and social science courses in order to meet graduation requirements. For students who wish to complete TVET programs comprised of series of multiple courses, these changing requirements for graduation have made it more difficult to achieve this goal, and have caused many schools to discontinue many TVET course and program offerings.

Funding of TVET Courses and Programs

Because of the technical nature of TVET programs and the heavy reliance on technology and other equipment, these programs are expensive to offer and maintain. Funding for TVET comes from a combination of federal (U.S.), individual state and local (tax) sources. At the federal level, funds from the Carl D. Perkins Career

and Technical Education Improvement Act (the present-day version of the Smith-Hughes Act of 1917) provides about 8–10% of the operational costs associated with a local school offering TVET courses and programs, totaling about \$1.1 billion USD per year in funding (U.S. Department of Education, 2011b). However, this federal funding for TVET has not increased for 20 years, and was recently reduced from a yearly average of approximately \$1.3 billion USD. In addition, each of the 50 states received a portion of the federal funds, and also funds TVET at different levels through state revenues, resulting in differences in course and program quality between the states. Finally, funding for U.S. schools relies significantly on local tax revenues. In the present economic climate, local levels of financial support are challenged to adequately support TVET programs. Coupled with the current emphasis on the academic disciplines in U.S. secondary schools, many TVET courses and programs across the country have been reduced in number or eliminated.

Within the challenge of funding issues, and the ability of various government structures to financially support TVET, historically, business and industry has not been a key partner with educational institutions. Financial support, equipment/material donation, opportunities for students to serve internships and apprenticeships and the overall involvement of the U.S. private sector with TVET activities has historically been limited. This has been a significant challenge toward the improvement of TVET courses and programs.

TVET Teachers

As with all areas of education in kindergarten through grade twelve (K-12) in the United States, TVET teachers are not well paid and the occupation of teaching is not a prestigious one. These facts make it difficult to entice college/university students to become TVET teachers, and to recruit qualified and talented individuals from industry to be TVET teachers. In all secondary teaching fields, the issue of retention of teachers is a significant problem. Many studies have shown that as many as 50% of first-year teachers leave the profession within five years (Ingersoll, 2003; Jalongo and Heider, 2006; National Commission on Teaching and America's Future and NCTAF State Partners, 2002).

While some traditional academic disciplines are not affected by changing technology, within TVET, almost all of the areas of study are impacted by continual technological advances. It is difficult for TVET teachers to obtain technical skill upgrades when they are in the classroom with students, and many schools do not have the financial resources to send their TVET teachers to professional development opportunities, such as technical update training.

Finally, teacher preparation programs for TVET teachers are declining in number at the college/university level. This phenomenon has been taking place over the past 20 years and has been documented by several studies (Bruening et al., 2001; Gray and Walter, 2001; Hartley et al., 1996; Lynch, 1991; Ruhland and Bremer, 2002; Zirkle et al., 2007). Many universities receive federal Perkins funding to operate, and since that funding has been stagnant for 20 years, it is difficult to offer programs.

Significant TVET Opportunities in the United States

The same issues that are currently presenting challenges for TVET in the United States are also offering significant opportunities for policymakers, educators and administrators.

Public Perception Opportunities

A substantial number of educators and policymakers have suggested situating TVET as the center of school reform in the United States. While there is still much debate on the core mission of K-12 education in the U.S., many believe, for the country's economic prosperity, sectors such as manufacturing and construction must thrive, and TVET courses and programs are a key component and contributor to these employment sectors. Recent publications, such as Harvard University's *Pathways to prosperity: Meeting the Challenge of Preparing Young Americans for the 21st Century* (Symonds et al., 2011) and The Heldrich Center's *Unfulfilled Expectations: Recent College Graduates Struggle in a Troubled Economy* (Godofsy et al., 2011) point to the need for multiple educational options and opportunities for America's young people.

On a positive note, some strands of research, including what is produced by The National Center for Career and Technical Education (NRCCTE), are beginning to confirm the benefits of secondary school TVET programs for students. For example, recent research has confirmed that TVET involvement motivates students to stay in school and can possibly help keep them from dropping out (Plank et al., 2005). In addition, TVET graduates earn more and are more likely to be employed upon graduation than students who complete a general-track education (U.S. Department of Education, 2004). Students at schools with highly integrated, rigorous academic and TVET programs have significantly higher student achievement in reading, mathematics and science than do students at schools with less integration between the

programs (National Research Center for Career and Technical Education Curriculum Integration Workgroup, 2010).

These research studies, the present status of employment in the United States (many unemployed or under-employed and a significant need for skilled labor), along with the overall state of the economy in the U.S., have caused many educators and policymakers to re-evaluate the role of TVET within the country's educational system.

Curriculum Opportunities

As previously mentioned, TVET programs have expanded their focus from the historic mission of entry-level job preparation to include college/university preparation, adult retraining and second-chance educational opportunities. This has resulted in some very innovative educational approaches. For example, some high school TVET programs offer both high school and college/university credits in a 'dual-credit' arrangement. Many high school TVET courses and programs are 'articulated' (linked) to TVET programs of study at 2-year community and technical colleges. These agreements between educational institutions are designed to encourage TVET students to continue their education past high school and earn an industry credential, an Associate Degree, or both. Still other TVET courses and programs have been revised to reflect 'career academies', a broader-based curricular approach that includes entry through professional-level occupations within an industry cluster. This curricular approach provides instruction within a family of occupations rather than focusing on one in particular. Another new approach is pre-apprenticeship programs, designed to introduce the basics of a trade to a student with little or no experience in that specific industry. The program covers basic tools, materials and the work ethic needed for the occupation, with the potential goal of the student desiring to apply to a registered apprenticeship program.

Finally, despite funding cutbacks, increased academic course requirements for high school graduation, the U.S. single-minded focus on a college/university education, and a host of other challenges, the number of students enrolled in TVET courses and programs has risen 157% since 1999 (Levesque et al., 2008).

Funding Opportunities

There is a renewed interest in education and training for TVET in the United States, resulting in part from a shortage of skilled workers, and the realization that 4-year

university degrees are not the only pathways to success (Balderrama, 2011; Symonds et al., 2011). While specific federal funding for TVET from the Carl D. Perkins Career and Technical Education Improvement Act has not increased, other initiatives such as those for Science, Technology, Engineering and Mathematics (STEM) education are beginning to involve TVET in the funding models. Some of these efforts are at the federal level, but many of these initiatives are being developed by individual states searching for ways to implement activities integrating STEM into K-12 instruction. At the local school district level, individual schools are also trying to shift some financial resources to the aforementioned career academies, pre-apprenticeship programs and other efforts focused on TVET and STEM activities.

With respect to private sector involvement of business and industry, there have been significant strides made in this area. The primary professional association for TVET in the United States, the Association for Career and Technical Education, has been very involved in the development of industry advisory groups to encourage partnerships between TVET providers and corporate entities. In addition, various organizations and professional industry associations have supported TVET initiatives at various levels, and have included Ford Motor Company, Apple Computer, Toyota Motor Corporation, the National Association of Manufacturers, and the National Council for Advanced Manufacturing, the National Skills Coalition and many others.

Teacher Opportunities

The employment of TVET teachers is expected to grow by 9% from 2010 to 2018 (U.S. Department of Labor, 2009). Individuals seeking to find employment as TVET teachers will be in demand, especially in newer 'hi-tech' fields such as biotechnology, green construction and exercise science.

With respect to compensation, while teachers in the United States are not paid well relative to other professions, on average TVET teachers are paid salaries equal to or sometimes greater than their counterparts in academic disciplines. This is due in part to the need for schools providing TVET courses and programs to remain competitive with the private sector salaries paid to technically skilled workers.

While teacher preparation programs are generally declining, they can still be found in a variety of colleges and universities. Large, research-focused, state supported institutions such as the Ohio State University, the University of Georgia and the University of Minnesota have TVET teacher preparation programs that date back several decades. State supported institutions with a focus on teacher prepara-

tion, including Ball State (Indiana) University and Northern Illinois University are another source of traditional and alternative TVET preparation pathways. Finally, privately funded institutions such as Ashland (Ohio) University and Brigham Young (Utah) University offer additional options for TVET teacher preparation. Many of these colleges and universities are collaborating and utilizing distance education to deliver teacher preparation courses and open opportunities for more potential TVET teachers (Zirkle, 2003).

Conclusion and Summary

Formal, federally-supported TVET courses and programs have been part of the United States educational system for almost 100 years and will likely continue to play a role in the future, despite the numerous challenges listed in this chapter. TVET is a multi-faceted educational discipline, and offers many different opportunities to all types of students, in part due to new curricular approaches that provide various other options for students in addition to the historical focus on preparation for entry-level employment. In turn, these new approaches to TVET have altered some of the negative perceptions regarding the role of TVET in the United States.

As the United States seeks to retain its standing in the global marketplace, reliance on TVET to provide skilled worker training will be a key piece of that effort. In addition, as educators and policymakers seek to find ways to engage students in the classroom and laboratory, TVET has shown it can play a role in that effort as well. TVET in the United States may no longer be relegated to second-class status.

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Youth Apprenticeships in Canada: Context, Structures and Apprentices' Experiences

Wolfgang Lehmann

Introduction

Apprenticeship training in Canada has always been a relatively marginal form of Vocational Education and Training (VET) or school-work-transition pathway. According to Canada's 2007 National Apprenticeship Survey (Menart et al., 2008), only 12% of the Canadian labour force is certified in a skilled trade. The same survey shows that less than 2% of the total labour force were registered in an apprenticeship in 2007. Similarly, less than 1% of a graduating secondary school cohort continues their education in an apprenticeship. The few Canadians who find their way into apprenticeships generally do so years after having left secondary education. In fact, the average age of apprentices in Canada was 30 in 2007 (Menart et al., 2008).

Yet, interest in apprenticeship training in Canada has increased substantially in recent years. This increased interest is related to two issues: 1) the labour market problems of young people who do not continue to post-secondary education; and 2) the lack of skilled workers and the parallel aging of the workforce in the trades. Unemployment rates for Canadians without a secondary school diploma in recent years have been twice as high as for all Canadians. These problems are even more pronounced for young people. Employment security, benefits, and income levels of Canadians with low levels of formal education are equally problematic.

Apprenticeship training is seen as an alternative pathway into fulfilling and rewarding employment for young people who are considered at risk of not completing secondary education or who are generally more interested in applied, rather than academic learning.

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At the same time, Canada, as all other industrialized nations, is faced with an ageing workforce and predicted labour shortages in all industrial areas. Given earlier retirement ages, these concerns about workforce aging and labour shortages are considered more immediate and pressing in the manual trades (Construction Sector Council, 2004).

As a consequence, the Canadian provinces have, in the past two decades, introduced programs aimed at attracting high school students into apprenticeship training programs, in order to expose them to alternative career paths earlier and to increase the profile of occupations in the skilled trades as a career possibility (see e.g. Lehmann, 2005; Taylor, 2007). The following paper presents research on one such program, the Registered Apprenticeship Program (RAP) in the Western Province of Alberta. Before discussing RAP, it might be instructive, however, to briefly review the structures of Canada's education system and labour market, and the school-work pathways these structures create.

Education Systems and Labour Market Structures in Canada

Most Canadian children and youth attend public elementary and secondary schools, which is mandatory until the age of 16 or 18, depending on province.¹ An important feature of Canadian education is the relative lack of streaming. All Canadian public schools are comprehensive schools, although some form of ability tracking begins to take place in Grade 7, when students are placed, based on tests and teacher recommendations, in a range of academic or applied courses or streams. The only school leaving certificate is the high school diploma, which students obtain at the end of Grade 12. Depending on the level and range of courses students completed successfully during high school, they will be able to enter university, community college, apprenticeship, or other, often private, training institutions. A significant percentage of a high-school cohort also enters the labour market without any post-secondary education. Table 1 provides an overview of educational attainment in the Canadian population. The table confirms the marginal status of apprenticeship training, especially amongst younger Canadian. It further documents the recent shift toward university as the preferred post-secondary education option. Com-

¹ Education in Canada is the mandate of the provinces. There is no coordinating federal ministry of education. Although the different provincial education systems are remarkably alike, given the lack of a coordinating ministry, there are nonetheless distinct differences. One of these differences is the mandatory schooling age, which was recently raised to 18 in Ontario.

Table 1 Population of Canada, 15 years and over, by age group and highest level of educational attainment, 2007 (%) (Source: Adapted from 2006 Census Highlight Tables (Statistics Canada, 2009))

Age group	All levels of education	Less than High School	High School	Apprenticeship/ Trade	College	University
15 and over	100	24	25	11	17	23
20–24	100	14	43	7	19	17
24–35	100	11	23	10	23	33

munity colleges in Canada are hybrid institutions that are currently in a state of transition. In some provinces, community colleges have become applied universities, similar to the new, post-1992 universities in the UK. Traditionally, however, Canadian community colleges offer applied training in many occupations for which young people would be trained, for example, in Germany's dual system.

The insignificant number of young people in workplace-based VET and the relatively large number of young people choosing university has a few of explanations. There is, for instance, no history of extensive employer involvement in the education and training of young people. Most education, whether in VET or not, is school based. Furthermore, the few occupations for which individuals can become certified through the apprenticeship system are concentrated in the skilled, manual trades. Yet, Canada's economy is largely a service economy, with 75% of the workforce employed in the service sector. Finally, politicians, policy makers, and educators have for some time engaged in a very visible public discourse that positions Canada as a knowledge economy and equates vocational and life course success with high levels of formal, post-secondary education.

It is also important to note that there is a relatively low level of vocational specificity between the education system and the labour market (Hamilton and Hurrelman, 1994). Few occupations in Canada specify educational pathways or credentials as an entry requirement. Instead, educational credentials are seen as evidence of skills and employability in a more general sense. Furthermore, the expansion of universities in the past three decades and the concomitant rise in enrolment have led to significant credential inflation, as increasingly high levels of formal post-secondary credentials have become entry requirements into positions and occupations, regardless of the skill content of these occupations (Brown, 2003; Collins, 1979). Despite

documented evidence of rising levels of underemployment² in Canada (see e.g. Li et al., 2004; Livingstone, 2004), this type of credential inflation has further increased the attractiveness of a university degree over other forms of post-secondary education or training (see e.g. Lehmann, 2009).

Apprenticeship in Canada

According to a recent study of Canada's apprenticeship system (Menart et al., 2008), only 12% of the labour force in 2007 was employed in the skilled trades, although many of these workers might have been trained outside the apprenticeship system (e.g. at community college) or outside Canada. If we look at actual apprenticeship registrations, we can further see that the number of Canadians trained in the apprenticeship system in a given year is very low. For instance, 358,555 men and women were registered as apprentices in 2007, which represents less than 2% of total labour force. Even lower are the number of people who complete their apprenticeships. In 2007, only 24,495 of apprentices completed their apprenticeships and became certified. In most trades, certification is based on the completion of a set number of hours in the trade while registered as an apprentice, plus attending vocational schools (usually in blocks) and the passing of examinations.

The staggeringly low number of apprenticeship completions is due to the fact that certification is not mandatory for employment in a high percentage of occupations in which apprenticeship training is possible. While individuals wishing to pursue a career as automotive technicians or electricians, for instance, will need to be certified, those seeking employment as carpenters, bricklayers, machinists, or cooks, for example, do not require formal certification. This creates completion and certification disincentives for both workers and employers. Workers can usually realize higher salaries as semi-skilled workers than as apprentices. The salary and employment penalty for not being certified is also relatively minor. Furthermore, during the technical, in-school portion of their apprenticeship, apprentices are not paid by their employer. In fact, employers usually terminate the employment relationship and apprentices receive unemployment insurance benefits while attending the in-

² Underemployment defines a situation in which a job incumbent has higher levels of formal credentials than the job content demands. It is also a rather difficult concept to measure. Livingstone (2004) relies to some degree on subjective, self-reported evidence of underemployment. Statistics Canada considers a person underemployed who has a university degree but spends at least one month in a given reporting period in a job requiring only high school education (see Li et al., 2004).

school portion of their training, which usually takes place once a year in a block and requires the payment of tuition. For employers, non-completion can be beneficial as they can employ a near-certified, but essentially skilled worker at a salary substantially lower than that of a certified journeyperson. Many apprentices who have completed the majority of their requirements in non-mandatory trades remain un-certified, or certification drags on for many years (Laporte and Mueller, 2010). The last point also helps explain the high average age of apprentices. In 2007, the average age of Canadian apprentices was 30 (Menart et al., 2008). More important, however, for the explanation of this high average age is the fact that many workers in the trades only decide to begin an apprenticeship after having worked as unskilled trades workers for often many years.

There are a number of other factors that contribute to the marginal status of apprenticeship in training in Canada. Historically, Canada has relied on immigration to fill its needs for skilled manual labour. Immigrants from across Europe have been essential in building the country's infrastructure throughout the twentieth century. This reliance on immigrant labour has meant that Canadian employers have been relatively lacklustre in their support of and direct involvement in training and education. Furthermore, employers generally expect Canadians to assume individual responsibility for employment readiness, at university, community college, or private training providers, often at a high cost. The already low involvement of employers in the training of young people is exacerbated by a fear of poaching. In other words, if only few employers invest in the training of their workforce, this investment can be easily lost if the trained employee leaves to assume employment with a different employer, likely one that did not invest in training. The employer who lost the initial investment is unlikely to recoup the loss, because of the scarcity of workplace-trained employees. Such a situation creates powerful economic disincentives to invest in the training of your own workforce. Finally, a hodgepodge of provincial regulations has made apprenticeship training relatively difficult to understand and hard to access for young people who might be interested in employment in the trades, while at the same time restricting mobility of credentials across the country. Coupled with the aforementioned disincentives in occupations that do not require certification, it is not surprising that high school students either are unaware of apprenticeship opportunities or forego them for other post-secondary education options that are more culturally established and understood.

Interestingly, however, the past two decades have seen a renewed interest in apprenticeship training as an alternative post-secondary pathway (see e.g. Lehmann, 2007; Taylor, 2007, Taylor and Lehmann, 2002). As mentioned earlier, this renewed interest has a two-fold basis. First, labour market data show that young people without post-secondary education are most likely to be affected by unemployment,

contingent employment, low income, and a host of other labour market problems. Apprenticeship training is seen as a potential to attract young people who might not otherwise continue their education or are even at risk of not finishing high school. The combination of school and work is seen to be particularly attractive to young people whose talents and interests are in conflict with the academic-abstract demands of the education system. Second, renewing interest in apprenticeship training is seen as an essential way to address looming labour shortages in the skilled trades in Canada. As in most (post-)industrial countries, Canada also has a rapidly aging workforce. This problem is even more pressing in the skilled trades because workers tend to retire earlier than in other industries, due to the physical demands of employment in the trades (Construction Sector Council, 2004). At the same time, an oil boom in the Province of Alberta has created above-average demands for skilled manual workers. The most promising, oil-rich deposits in the Northern Alberta oil sands not only require a very labour-intensive process of extraction and refining, the exploitation of these deposits has also created an associated employment boom in the construction of industrial facilities, highways, other forms of transportation, housing and so forth. Yet, few young people and their families appear to be aware of training and career options in the skilled trades. Finally, for the past two to three decades, immigration to Canada has shifted away from former source countries with strong traditions in manual, skilled labour. Instead, the majority of immigrants now enter Canada with a university degree from their home countries, while less than 10% of newly arriving immigrants are experienced or certified trades workers (Statistics Canada, 2008), which further exacerbates the need for a 'homegrown' solution to the projected labour shortage in the trades.

In an effort to address the dual challenge of labour market shortages and school-work transition problems of non-academically oriented young people, provinces have established various forms of apprenticeship programs aimed at high school students. Alberta's RAP will be the focus of the remainder of this chapter.

Registered Apprenticeship Program in Alberta

Alberta's RAP was introduced in the early 1990's as an alternative form of vocational education aimed at young people with an interest in a career in the trades. Although modelled after Germany's dual system, participants in RAP are still active high school students. RAP is therefore not a post-secondary program, but a high school initiative. It is aimed at students in the final two years of high school (Grades 11 and 12, when the student is 15 or 16 years old). Students enrolled in RAP re-

ceive dual credits for their participation: hours spent in the workplace count toward their high school completion, as well as apprenticeship requirements. Most students alternate between high school and workplace on a term basis. For instance, they will spend the winter term at school, taking their required courses, and the fall term at work. In occupations with more flexibility, students might also spend the morning at school and the afternoon at work. The former arrangement, however, is more common. During their time in the workplace, RAP participants are fully registered apprentices. This means that formally their on-the-job learning falls under the jurisdiction of the Alberta Apprenticeship and Industry Training Board and the regulations governing general apprenticeship training in Alberta. If a RAP student drops out of high school or fails to graduate, the Alberta Apprenticeship and Industry Training Board voids his or her accumulated work hours. This policy is considered an essential element of RAP's stay-at-school strategy, at once attracting non-academic students to a more experiential alternative to completing high school, and providing an incentive for sticking with the program. The program has seen significant growth in enrolment since the first five students started in RAP in 1991. For instance, 980 students were enrolled as RAP apprentices at the end of 2001 (Alberta Apprenticeship and Industry Training Board, 2002), when the data for this study were collected. By 2009, enrolment had further grown to 1,700 (*ibid.*, 2010). Yet, these numbers still comprise less than one per cent of all high school students and about 2.5% of all apprentices registered in the province.³

Methodology

Between November 2001 and October 2002, 29 RAP students in Edmonton (Alberta, Canada) were interviewed, using either one-on-one semi-structured interviews, or focus groups. The sample was drawn from four different schools which were chosen because of their above-average enrolment in RAP. All interviews and focus groups were carried out at the individual school site, usually in a conference room or available classroom. Participants were either in their first or second year of RAP (Grade 11 or 12), which means they were between 16 and 18 years old. All interviews and focus groups were audio-taped and transcribed.

The vast majority of RAP students participating in the study were male. The sample included only five women, all of whom apprenticed as hairdressers. Although efforts were made to include young women apprenticing in traditionally

³ For a more detailed description of RAP, see Lehmann (2005, 2007).

Table 2 Trades/Occupations of youth apprentices, by location

Edmonton	N
Automotive, Motorcycle & RV Technicians Heavy Equipment Technicians	8
Electrician	3
Carpenter	2
Welder; Millwright; Pipefitter	6
Hairdressers	5
Chefs	4
Landscaping	1
Total	29

male trades, there were none in the schools selected for this study.⁴ As Table 2 shows, the RAP students in this study apprenticed as car mechanics, millwrights, heavy duty mechanics, pipefitters, carpenters, electricians, welders, chefs, landscapers and hairdressers.

The interview quotations in the following analysis reflect the actual transcripts as closely as possible, with a few minor editorial changes to make them more readable. Pseudonyms are used throughout to protect the confidentiality and anonymity of the research participants. Finally, I wish to stress that it is not my intention to generalize from this data to the experiences of all youth apprentices or conditions in all youth apprenticeship programs across Canada, but to offer insights and interpretations to stimulate further study and investigation into an important, yet under-researched (at least in Canada) policy issue.

Findings

In the following sections, I will present and discuss a number of key analytical themes that emerged from the data analysis and relate them to the potential of

⁴ There are few efforts in Alberta to increase female participation in traditional male trades. There are no equality of opportunity programs or diversity initiatives (at least at the high school level) that try to increase participation of women in male-dominated apprenticeships. Generally, it is seen as sufficient to ensure that young women are aware of the opportunities in the trades (Taylor and Lehmann, 2002). More research is needed to investigate why, for example, so few women choose careers in the trades, to what extent this gender imbalance is related to gender role socialization or hostile workplaces (see Gaskell, 1992), and how cooperation with different partner groups might redress these imbalances.

youth apprenticeships like RAP to address labour shortages and create school-work-transition alternatives for young Canadians. I have organized the data into four analytical themes: 1) the marginality of apprenticeship training; 2) the lack of corporative structures and supports, which includes the conflict between RAP as a learning program for students and a source of cheap labour for employers; 3) the relationship between responsibilities and rights of the different partners involved in such programs, and 4) the potential of programs like RAP to create meaningful PSE alternatives for non-academic young people.

Apprenticeships as Marginal Pathways

Despite the efforts undertaken in initiatives like RAP, apprenticeship training continues to exist at the margins of high school programs. Few teachers, parents and students have personal experiences with apprenticeships. In the schools where the research took place, usually only one teacher had responsibility for all forms of programs involving work placements, including RAP. Given the low profile of apprenticeship training both in schools and outside, the majority of participants had little understanding of the principles of apprenticeship, the rules and regulations guiding apprenticeship training, and what being involved in apprenticeships beyond high school meant:

It was kind of difficult at first, because talking to some of the people at school [teachers and counsellors] about it, they kind of were talking to me up at their level. And I did not really understand what they were talking about. ... I wasn't really sure on what to do because I had never done something like this before. ... And it was kind of hard to get information from them (Tim).

As the quotation above shows, in addition to Tim's lack of knowledge about the program, neither were the teachers and counsellors at Tim's high school well informed about these options. In fact, many of the participating students mentioned that most of their teachers were unaware of their involvement in RAP and the fact that they spent significant amounts of time outside school in a workplace.

Furthermore, decisions regarding students' involvement with RAP, such as deciding on an occupation or finding employers, were often made without their direct involvement. None of the students in this study had found their own employer. Instead, matching of students with employers willing to accept students was done by the schools:

'Well, I actually wanted to do three things. Automotive mechanic, heavy duty mechanic or auto body repair person. And the one that I decided on was heavy

equipment mechanic ... [because] that's where the employer was found [by the placement coordinator]' (Max).

This matching may at first seem like a useful service provided by schools on behalf of students. Nonetheless, it is rather problematic as it limits the agency of young people entering apprenticeships and interested in future employment in the trades. More importantly, it also means that many schools are more interested in maintaining good relationships with the few employers willing to participate, rather than looking out for the learning needs and interests of students. In order for apprenticeship training to be a positive experience, it is necessary that the apprentice has some amount of control over the decision-making process and that decisions about occupations and employers offer a fit with the apprentice's interests and talents.

In addition to the limited control RAP students have over the terms of their participation, students also have to negotiate the potential disadvantages that arise from the negative images and stereotypes associated with apprenticeship training and employment in the trades more generally, as the following two quotations show:

'I think the reason more people aren't going after this is that they think it's more like a lower-class type job, because it's labour. It is a lot of physical work, and they're thinking that people who are doing that don't have the brains. ... Some people do, they think, ah, you're a tradesperson, you know, you're not that smart. That's why you're doing it' (Nathan).

'We're stereotyped as stupid people. It's because we don't go to university or something like that. So, it's kind of like ... well, you're not going to university, so you're not going to make anything out of your life' (Joelle).

These negative stereotypes stem from a pervasive public discourse that equates life course success with high levels of formal education, preferably at university. The marginal status of apprenticeship training and the lack of understanding about the income and employment possibilities exacerbate these misconceptions. Finally, most teachers in high school are themselves academically trained and likely lack understanding of this specific pathway, which in turn limits their ability to understand the problems of and support students in programs like RAP.

Lack of Corporative Structures and Supports

The last point raised above is also connected to the fact that youth apprenticeship programs like RAP (or apprenticeships in Canada generally) lack the corporative structures and supports that are such an integral part of Germany's dual systems. Unions, for instance, are rarely involved in matters concerning youth apprenticeship training and the learning that takes place in the workplace is largely deregulated.

Furthermore, the relatively low profile of apprenticeship training in Canada not only means that few employers participate, but that those who do tend to do so with varying degrees of enthusiasm. This often means that young apprentices encounter negative attitudes of employers and colleagues, who perceive of them as an intrusion into the workplace order, as Tim's experience illustrates:

'There's times when we go to our boss and ask questions and he looks at us like 'You should know what to do'. He looks at you like you're dumb. ... But we're supposed to be learning. ... Some of the older people look at you different. Because you're such a young kid and they think that you shouldn't be in there or something.'

Tim's problems with his employer are especially problematic, as this highlights the tensions between students' learning needs and employers' labour needs. Both apprentices and employers suffer from a lack of structures and regulations that define this employment relationship and guide behaviour and learning.

Tim's second concern, about the reaction of his co-workers, is echoed by Scott:

'I am the youngest person there. It can be hard sometimes; like the way people talk to you at the worksite, like you're younger and they don't expect you do know as much. You're like 'downsized'.

As with Tim's employer problems, these types of workplace tensions are to be expected if young people in the workplace are an oddity, rather than the norm. Considering that the average age of apprentices in Canada is 30 and that programs like RAP still only attract a small minority of high school students, the presence of very young co-workers is likely to create problems of the kind described by Tim and Scott.

An essential aspect of the corporative structures of, for instance, Germany's dual system, is the school. In apprenticeship programs like RAP, participants do not yet attend technical training for their occupation. Instead, they are still formally enrolled as secondary (high school) students. Unfortunately, unlike the vocational schools in a dual system, the high schools tend to remain rather removed from the apprentices once they have been placed with an employer. As I have shown earlier, schools do take an active role in placing students in employment situations. They do, however, not take an active role in supervising and monitoring the actual employment experiences of participants. This is especially problematic considering that programs like RAP are partly mandated to offer work-school experiences that make learning more meaningful for students who might otherwise struggle in an all-academic environment. Ted's reasons for participating in RAP confirm this concern:

'It was more or less, I guess, that I didn't have to go to school for a full year. I just had to go half a year [laughs] and that sounded kind of interesting to me.'

Rather than seeing the connections between learning at work and learning in the classroom, students in programs like RAP are at risk of experiencing a profound disconnect between the two locations and their respective modes of learning. None of the apprentices in the study had a proper learning or lesson plan that guided their experiences in the workplace. Liz' comment below reflects this reality rather succinctly:

'[There is no learning plan], you just kind of watch and learn. Watch what they do and you just kind of pick it up.'

Furthermore, none of the schools offered any kind of 'course' or 'debriefing' for the apprentices to discuss and share their workplace experiences. For apprentices like Bonnie, such a debriefing would be essential in alerting the school's workplace coordinator to her lack of learning in the workplace:

'I'm still scrubbing the floors [at the salon]. I'm still not getting clients. And if a walk-in comes through the door, the other apprentice gets them, because she's just been there longer, it's just seniority.'

Not only does this waste the learning potential of RAP, it also makes these young people vulnerable to being exploited as a source of cheap labour.

Responsibilities versus Rights

In contrast to many European countries, Canada's labour market is relatively deregulated. Young people especially, during high school and post-secondary education, are both beneficiaries and victims of a low-salary, low-stability and low-protection labour market. Young people actively seek out these types of jobs as they are flexible enough with low levels of commitment to fit a school or university/college schedule. Employers benefit as they can hire young workers with very little commitment to long-time employment and at relatively low labour costs. If we add to this tradition of contingent youth employment the above-mentioned concerns regarding unregulated and un-monitored youth apprenticeships, it is little surprise that these placements can lead to various forms of exploitation, which are not recognized by students as such (see first quotation) and continue without interference by the schools (see second quotation):

They ask you to do something, you do it, like, as fast as you can, as good as you can ... be nice to them. If you sweep the floor, put some effort into it, make it look like you care about what you're doing, then they'll be like 'oh, this guy actually cares, he's doing something ... anything he does, no matter if it's a good job he likes to do, or a shitty job like taking out the garbage. He still puts the same effort into it (Riley).'

'No one ever really talks to me about the work I do, here at school' (Debbie).

What the students learn then is a focus on their responsibilities in the workplace, as defined by employers, but little about their rights, as set out in labour laws or in agreements between the school and the employer (which, as I have shown, rarely exist) or in apprenticeship regulations.

Positive Pathways

The concerns raised in the above findings notwithstanding, most students spoke very positively about their experiences in RAP and what participation means to them. For some students, RAP was indeed the reason they stayed in school and found some renewed meaning that ultimately could help them graduate, as this quotation by Nathan shows:

That's half the reason I took the RAP program. I was getting bored with school. I had no initiative to be here, I had no want to be here, to do anything. For me school was becoming a joke. And I decided that, listen, I'm doing nothing here. I mean I might as well do something with myself. At least do something that's doing something for me. And that was going out and getting a job. And I thought, why not go out, if I'm getting a job, why not let it have more than one benefit to myself. I'm getting paid, I'm getting credits [toward high school completion]. I mean, how can I complain with something like that?

In addition to making school more meaningful, participation in RAP also helped students thinking of their lives and careers beyond high school:

'Ever since I went into RAP, everything's been really good for me. ... I'm the only one going somewhere in my life right now, out of all my friends' (Debbie).

'Life in general became more meaningful. I just got the overview of what life is gonna be, you know, I really wanna get out of [school] and just start my life, start a career, get going' (Brent).

As the final quotation shows, RAP not only offered an educational alternative to those less academically inclined or interested, it also was attractive to those who have an aptitude and interest in manual work:

'I've always been good with my hands, I've never been book smart at all. I've always been fascinated with watching things get done. Like, you sit there and you watch them pour concrete foundations for your house, and watch them frame it, and you watch them put the plywood on and drywall it' (Dean).

Precisely because of the hopes and expectations these young people invested into apprenticeship training, Canadian educators and employers have a responsibility to provide young people with better and more meaningful vocational education experiences.

Conclusion

Given the continued marginal status of apprenticeships in Canada, both in high school and outside, there is little chance that programs like RAP can seriously address current or looming labour shortages in Canada. They can, however, offer alternative post-secondary education pathways to students who might be at risk of dropping out of high school or would otherwise enter the labour market without any further education or training. Herein lays the biggest potential strength of programs like RAP: that they are situated in a comprehensive system of secondary education that potentially offers the opportunity of entry into vocational training, without automatically precluding access to more academic forms of post-secondary education. Rather than the more restrictive streaming in tripartite school systems like Germany, those who participate in RAP or similar programs in Canada are left with the option to complete enough academic-level high-school courses to keep open a range of post-secondary alternatives. In this sense, they are closer to young people in Germany with *Abitur*⁵ who choose to complete an apprenticeship rather than enter university (see e.g., Pilz, 2009). In fact, the policy underlying the development of RAP is based on principles of new vocationalism, which aim for a stronger integration of academic and vocational learning (Benson, 1997; Grubb, 1996). Hamilton and Hurrelman (1994), for instance, argue that what makes youth apprenticeship programs (and other workplace-based learning programs) attractive is the fact that learning is integrated into everyday processes of the workplace, rather than constituting a 'total pedagogic interaction', as is the case with school-based learning.

In reality, as I have shown throughout, many students enter programs like RAP as a form of escape from the perceived drudgery of academic learning. Furthermore, schools and employers do little to provide students with the opportunities and the tools to develop the skills for the integration of academic and applied forms of learning. At the moment, there is an almost exclusively one-sided adjustment (the student adjusting to the culture and discipline of the workplace), lacking any form of integration into curriculum (Lehmann and Taylor, 2003). But it is exactly this integration that would be extremely useful for dealing with new conflicts, understanding new social relations, and being aware of one's rights in the workplace (Hamilton and Hurrelman, 1994). Related to this problem of integrating academic and vocational learning is the lack of learning objectives in RAP. What RAP students do at work does not seem to be regulated by any lesson or learning plans that the school may have discussed with employers. This makes it particularly difficult for

⁵ Abitur is the German secondary education certificate required for admission to university.

youth apprentices to come to terms with their new roles as employees and workers. The rather uncritical acceptance of power relations at work outlined in the findings section of this chapter raises serious concerns about the value of a program that is essentially part of the students' high school education and should therefore have some pedagogical value. However, students usually are not given a chance to discuss and reflect on these workplace social relations at school. Neither are they always aware of their rights at work.

At this stage, programs like RAP are not short of ambition and good intention, but in need of a stronger regulatory framework, which includes proper learning plans that guide the activities apprentices encounter in their placements and help employers be prepared to receive young people. It further requires a form of collaboration between schools and employers that extend beyond the development of amicable relationship to guarantee the continuation of placements, and instead involve mechanisms for schools to intervene on behalf of students when problems during placements occur.

This last point, the relative lack of placement opportunities offered by employers, also highlights the need for the development of a stronger infrastructure that creates incentives to offer placements.

More concretely, RAP students need to be provided with a venue in which to 'debrief' their workplace experiences with teachers and other RAP students. This could be achieved in regular classes they attend during their placement period, where they receive information about their rights in the workplace, labour laws, apprenticeship regulations, unions, and workplace safety. Furthermore, schools and employers (together with provincial regulatory body responsible for apprenticeship training) could draw up more detailed learning plans for the time students spend in the workplace. This would not only help teachers/work experience co-ordinators supervise and follow students' progress at work, but also formalize employers' commitment to entering into a work and learning/teaching relationship with students and help them develop strategies to manage the presence of very young workers in their workplaces. For participating students, such learning plans would be essential in highlighting the connections between the different forms of learning they encounter at work and at school.

Programs like RAP offer tremendous opportunity for alternative and meaningful educational and career pathways for young people. The students in this study indeed viewed their participation in RAP as a positive experience. Teachers, counsellors and employers, too, are sincerely concerned with the wellbeing of young people and the development of a skilled workforce. Yet, in their current form, programs like RAP are limited by exploitative workplace practices and unfulfilled learning potentials. Educators and policy makers need to be more aware of these educational

contradictions in order to develop youth apprenticeship programs that provide students with truly meaningful learning experiences as well as necessary workplace skills.

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Re-conceptualising Vocational Education: The Transition from Powerful to Useful Knowledge

Roy Canning

Introduction

In an interesting chapter in his book 'Bringing Knowledge Back In' Michael Young asks an important and timely question: 'How can vocational knowledge be distinguished from school or academic knowledge?' Justifiably he claims that very few authors (Billet, 1997; Winch, 2000; Guile, 2006; Hager, 2007) have attempted to answer this question by giving a coherent epistemological account of the type of knowledge that underpins vocational education (Young, 2008). His answer to the question rehearses the argument in support of social realism and the forms of knowledge grounded in the sociology of Durkheim and Bernstein. Here knowledge acquires meaning and objectivity through historical and social processes that transcend the conditions of its production. This form of knowledge is contrasted with that of social constructivism and the particular vested interests of powerful social groupings. In the case of vocational knowledge, the main culprits are the 'standards movement' that has relegated the role of knowledge to that of a supporting act for outcome-based occupational competencies (Wheelan, 2009).

This debate on the nature of vocational knowledge is long overdue, particularly within the vocational education and training (VET) literature. What is the type of knowledge that characterises the vocational and how is this knowledge different from other forms of knowledge? What is the role of knowledge within the vocational curriculum and can it be taught in an educationally meaningful way? Given the expansion of pre-vocational education in schools and the continuing interest in initial work-based training then it is important to be clear about how we understand and apply vocational knowledge within the curriculum. This is particularly

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important for post-industrial countries that have witnessed a significant and persistent decline in their manufacturing sectors and become dependent on a thriving service-based economy.

I will argue in this chapter that there is a need to radically re-think how we come to understand and apply vocational knowledge in advanced serviced-based economies. This will involve a discussion of how vocationalism has been viewed historically within the UK in comparison with academic studies. A broader and more expansive definition of the vocational will then be suggested based upon the notion of 'useful knowledge'. The second section of the chapter will then provide an analysis of secondary data sources to determine the range and extent of the vocational curriculum within Scotland. Finally, I will argue against replicating a 'Dual System' of apprenticeship in a post-industrial economy. Instead, I will suggest developing pedagogic practices based upon internships and placements for highly skilled workers, while simultaneously re-inventing a framework of apprenticeships for trainees in service-based industries.

A Procrustean Enterprise

Interestingly, for many UK scholars the debate on what constitutes the vocational is often discussed with reference to other countries rather than their own. In international comparisons Germany (Greinert, 2007) is often held up as an exemplar of good practice with an emphasis on occupational structures (*Beruf*), a broader educational curriculum (*Bildung*) and a strong link between theory and practice (*Duales System*). Going further afield, the United States of America invariably offers us the most rewarding comparisons in terms of vocational education and social justice (Lewis, 1997) and alongside Australia helps us to question the underlying social class divisions and gender bias that often characterise much of initial vocational education (Polesel, 2009). However, rather intriguingly, there is little in the literature on how vocational knowledge has been conceptualised by academic writers in the UK. Perhaps this is not surprising, as the overwhelming desire of cultural commentators has been to elevate and privilege liberal knowledge within a paradigm that entraps and often denigrates the vocational. Indeed, this privileging of 'powerful knowledge' has a long and distinguished history, one in fact that could be seen as a very English obsession.

Matthew Arnold's *Culture and Anarchy* offers one of the most celebrated accounts of British society and the role of education and literature (Collini, 2007). Writing in 1869 he warns against the insularity, complacency and muddled-headedness of *practicality*. Instead he encourages us to stay aloof from the practical

view of things by adopting a disinterested pursuit of perfection. This cultural inheritance of the best that has been thought and said is required in order to avoid rough and coarse action. This sweetness and light of intelligent thought is founded upon a liberal arts education. Here the distinction between Hellenism and Hebraism is made, where the former is characterised by beauty, knowledge and spontaneity, while the latter is concerned with duty, rules, subjugation and the self. Arnold's concern was to counter the English protestant obsession with obedience and strictness of conscience with those who wish to avoid the trouble of thinking.

Arnold's concept of culture and the role of liberal arts education followed the publication of another canonical text that also privileged universal knowledge while disapproving of useful knowledge. Writing in 1852, Newman associates liberal education with a habit of the mind, freedom, equitableness and wisdom (Turner, 1996). Here the *utility* of knowledge is questioned, the need for the mechanical and particular that relies upon memory ridiculed. Universal knowledge in contrast refuses to be informed by an end as nothing accrues of consequence beyond the using. Useful knowledge and liberal knowledge are in opposition, as the latter cannot be gained through learning or acquirement, while the former has aimed low but fulfilled of its aims.

Like Arnold, Oakeshott (Williams, 2007) believed liberal education offered a place apart that enabled us to make the most and best of ourselves. This 'ordeal of consciousnesses' was concerned with conduct and not simply behaviour and could not be acquired through instrumental learning. The distinction here was made between work and play, with toilsome activity and the joy of pursuing a disinterested form of knowledge. Genuine learning was not concerned with the acquisition of vocational knowledge, with utility or a body of knowledge that does not look outside itself. This was seen as pantomime learning that maintained the current manner of living and rarely raised itself above the level of the practitioner. Vocational learning meant being able to read the literature but not think the literature. In contrast it is freedom from considerations of utility that characterises the liberality and joy of genuine learning.

Bernstein also argued that theoretical knowledge differs from the everyday knowledge of experience. Extending the work of Durkheim, he characterises abstract knowledge as a form of vertical discourse, while the everyday knowledge of practice could be seen as a form of horizontal discourse. The analogous comparison made by Durkheim is between the sacred and the profane. Here the mundane knowledge of the everyday is likely to be local, context dependent, tacit and specific. According to Young (2010) these knowledge structures can be seen as representative of the different forms of knowledge within the curriculum. The vertical forms of knowledge are theoretical, hierarchical and transcendent, while the horizontal

forms of knowledge are practical, context dependent and imminent. Here we are told that knowledge embodied in the curriculum is objectively given and transcends the social conditions under which it is produced. It is socially constructed but not *purely* a social construction (Thompson, 2009).

What is striking about this very English discourse of knowledge is the relentless privileging of a particular form of knowing. What counts is the sacred, vertical, abstract and transcendent. Not only does this count but it also constructs a paradigm within which every other form of knowledge is legitimised. This according to Brandom (2008) is: 'A Procrustean enterprise, which can proceed only by theoretically privileging some aspects of the use of a vocabulary that are not at all *practically* privileged, and spawning philosophical puzzlement about the intelligibility of the rest' (Brandom, 2008, p. 7).

Of course it is the everyday and mundane knowledge associated with the vocational that becomes the *other* within these discourses. Here practical knowledge exhibits a weak grammar, lacks coherence and structure, and is unable to transcend its conditions of production. It is characterised by concrete situations that are inextricably linked to a material base and thus unable to embody any principles of connectedness (Guile, 2006; Thompson, 2009).

Since Newman introduced this debate about the value of 'useful knowledge' we have witnessed the gradual but important shift in what constitutes a liberal education. Newman, like Arnold, excluded professional education within this definition. Anything that had a useful purpose would have little to offer beyond its use. However, by the time we arrive at Oakeshott, liberal education embraces the scientific and with Bernstein encompasses the specialised languages of the social sciences. More recently, this extension to the project of powerful knowledge has gained a hold within the current debates surrounding competency-based education and pedagogies connected with social constructivism (Moore, 2009; Young and Muller, 2010).

Vocational Education

The vocational requires us to replace concern with *meaning* by concern with *use* (Wittgenstein, 1958). Here it is important *to do* in order to count. This pragmatic turn towards embodied practices is not simply another dimension within the discourse of powerful knowledge. It is a radical challenge to it where everything is what it is and not another thing. Here we are invited to engage with a much more complex and broader notion of knowledge, one that has its own internal logic and

grammar. This conception of knowledge extends beyond the ‘perfection of the intellect’ to other domains of knowing, including the sensorial, emotive, spatial and somatic (Marchand, 2008). It is in essence a form and expression of knowledge that is characterised by a *difference in kind* and not simply a dimension of another property. There are similarities of course with other forms of knowledge as it prepares young people for life and requires foundational literacy and numeracy abilities (Winch, 2000). However, it is *different in kind* by being materialistic, discursive and normative in form and expressed through multiple and complex representations. It is where meaning has been written into things and not layered over them (Wittgenstein, 1958). It also acknowledges that the particular and universal can co-habit the same space and time. That one need not exist only in the absence of the other or as Brandom (2008) would claim a set of doings and sayings that reflect both use and meaning.

This is not to deny the existence of propositional knowledge but rather to recognise a particular type of theoretical quietism or low level generalization understood as concrete embodiments of extended and iterative practices. These understandings are more likely, in the initial stages of learning anyway, to be embodied and tacit and arrived at by constant rehearsal and repetition and, interestingly, often through the giving and asking for reason (Guile, 2006). It will also involve the reiteration of norms or values transmitted within occupational groupings or modelled by teachers during practice-based learning activities. These values are not simply the neo-conservative ones of obedience and quiescence captured within an instrumental vocationalism (Winch, 2010); but rather come to represent what one has to do in order to count as saying something within a set of social practices. Indeed, for the novice learner, this may initially mean simply acquiring a vocabulary or language in order to say something about that practice.

What Counts as Vocational Education in a Post-industrial Era?

Interestingly, what is often regarded as vocational education in a post-industrial society is frequently determined with reference to an industrial era where the vocational becomes synonymous with the crafts and trades and with particular intermediate levels of qualification. This quote from a recently commissioned review of the literature on vocational learning in Scotland demonstrates this point:

For the purpose of this literature review, vocational learning is defined as education, training and/or learning intended to equip persons for a specific vocation in indus-

try (broadly defined including traditional and creative), commerce, IT and/or that which specifically seeks to develop knowledge and skills in learners in order to operate successfully in the world of work. It encompasses apprenticeships and technical education where the learner directly develops expertise in a particular trade or group of techniques or technology, as well as Skills for Work qualifications and other similar courses. While we are aware that much of higher education is vocational, we have been asked to exclude from the scope of this review professional/vocational courses in subjects such as medicine or accountancy, entry for which normally requires prior attainment in non-vocational subjects. Higher level learning in specific vocational and technical areas (e.g. between SVQ level 4 and 5) may, however, come within the scope. The treatment of work-based and workplace learning and training in this report focuses on learning up to SVQ level 4 (HNDs) (Scottish Government Social Research, 2008, p. 2).

There is an acknowledgement here that the vocational can be represented at different qualification levels and across different occupational structures. Here it is possible to have foundational, intermediate and higher level vocational awards and that these may also cover service-based industries and the public and third sector economies. Also hinted at are the different forms of knowledge that could be included within the notion of vocations: literary, scientific, artistic and aesthetic. However, the quote clearly identifies the confusion and ambiguity surrounding any attempt to narrowly define what constitutes vocational education. What is missing here is a basic conceptual framework for determining the essential features of what counts as vocational learning, prior to stipulating what this actually means in terms of occupational sectors or levels of qualification. However, before doing this it is important to set out what in economic and labour market terms can be described as a post-industrial society.

The example I will use here of a post-industrial economy will be Scotland, a relatively small northern European country. Although part of the UK, Scotland has a distinctive culture, devolved governmental powers and a long and distinguished history of democratic education. It has also emerged from a strong industrial economic past and established itself as modern service-based economy. This can be seen from Fig. 1, which identifies the distribution of employment by industry. The largest employment group in Scotland is public administration, education and health, employing 32.1% of all workers. Manufacturing accounts for only approximately 8.6% of the workforce, while the construction sector accounts for 7.9% of the labour market. It is clear from this figure that the service sector dominates the post-industrial landscape.

Figure 2 below provides details of the distribution of employment by occupation in Scotland in 2009.

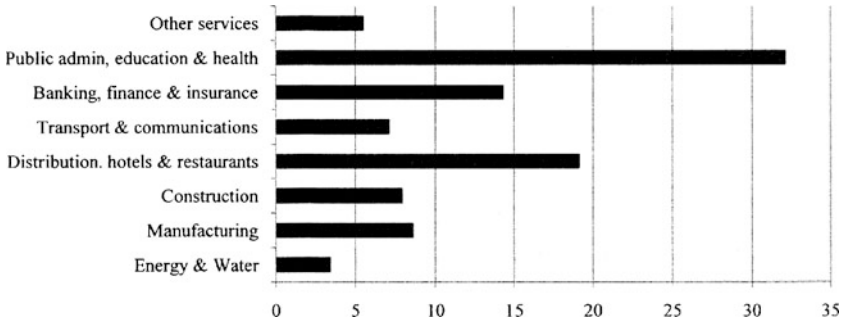


Figure 1 Distribution of employment by industry, Scotland 2009 (%) (Source: Scottish Government (2010a))

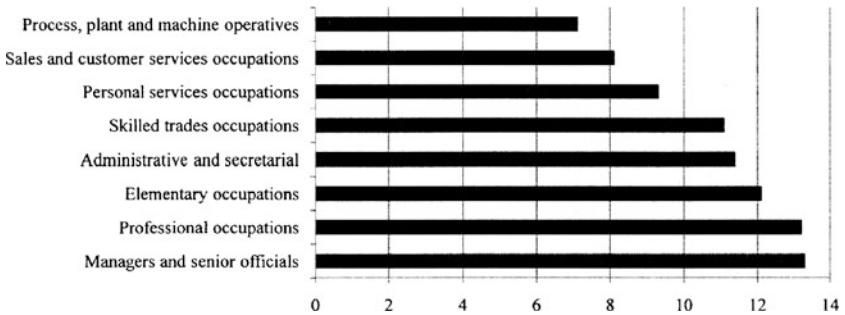


Figure 2 Employment by occupation, Scotland 2009 (%) (Source: Scottish Government (2010a))

It is striking that the managerial, professional and associate professional and technical group employ 41.1% of the overall number of working people in Scotland. This contrasts with 11.0% being employed within the skilled trades and 12.0% in elementary occupations. Indeed, the fastest growing groups are in the associate professional and technical categories and the elementary occupations and personal services. The largest decline in employment by occupation is within the skilled trades and the process, plant and machine operatives (Scottish Government, 2010a).

According to a recent international report if employment trends continue at their existing rates, then ‘... by 2020, our projections suggest that Scotland could actually attain 3rd place in the world for higher level skills, but will decline to the equivalent

of 27th place amongst the 30 OECD nations for intermediate skills, and not reach the top 20 nations for low skills' (UKCES, 2010, p. 15).

The report then goes on to claim: 'Our detailed analysis of the supply of skills across the UK suggests that each nation presents an 'hour-glass' skills profile. By global standards, Scotland has too large a group of low skilled and unskilled people, alongside a relatively strong proportion of people with high level skills, with a very narrow 'waist' of Intermediate Skills' (UKCES, 2010, p. 15).

This growth in the share of the gross domestic product arising from a service-based economy has been further fuelled by the economic policies of the Scottish Government, more recently articulated in its report *Skills for Scotland* (Scottish Government, 2010b). Here key industry sectors have been identified around the Creative Industries, Energy, Financial and Business Services, Food and Drink, Life Sciences and Tourism, Education and Healthcare. It is anticipated that these industries will provide future economic growth based upon a skilled workforce.

On the supply side of this equation, the university and college sectors provide the education and training to support the expansion of higher skilled jobs. For instance, in 2008/2009 over 76% of graduates found employment in graduate level occupations in the service industries (Scottish Government, 2010c). Indeed, one of the most intriguing aspects of this movement to a post-industrial occupational structure is the squeezing out of Intermediate level jobs. The rapidly expanding occupational groups are to be found, rather paradoxically, both within the associate professional and technical occupations (28.5% of employed graduates entered these occupations in the year 2008/09) and at a basic skills level. The latter have been increasingly recognised as a priority group in terms of literacy and numeracy skills.

The flagship programme that supports the development of intermediate skills in the economy is known as Modern Apprenticeships. Although this re-vitalised apprenticeship scheme had its initial difficulties in being established (Canning and Lang, 2004) it has now gained support from across the political spectrum. There are approximately 20,000 new apprentices recruited onto the programme on an annual basis. The majority of apprentices are now women and employed in the service based industries. The completion rates on the scheme have improved significantly over the years and now stand at 70% for the cohort, a figure comparable with other European countries. However, it is important not to over-emphasise the significance of this initiative as the number of apprentices as a percentage of the workforce is very small indeed (under one per cent) and given the current level of employer demand is unlikely to grow significantly in the future.

An Expansive Definition of Vocational Education

It can be argued from our initial discussions on ‘useful knowledge’ and the shifting notion of skill-sets in a service-based economy that it is necessary to question continually the nature and scope of vocationalism in any modern society. What was once an intermediate skilled job can easily migrate to an associate professional one or, indeed, the direction of travel could be in reverse to an elementary occupation. For example, nurses are now classified as a minor professional group and undertake their professional education within the university sector, whilst postal work is now classified as an elementary occupation. In addition, there are innumerable occupations that have emerged over the past century that cannot be easily classified by job title or the level of qualification that is held by the incumbent.

Any conceptual framework that attempts to encapsulate the essence of vocationalism needs to fully embrace the pragmatism of ‘useful knowledge’. It is important here *to do* in order to count as saying something. This discursive aspect of the vocational also requires a language in order to interact, a language that often has to be acquired at the initial stages of development. This does not mean that *use* is devoid of *meaning* but rather that meaning and use can be mutually illuminating. We also have to acknowledge the essential materiality (Barad, 2007) of the vocational, whether this is in terms of people, material objects or the manipulation of artefacts. Finally, all vocations have a moral and ethical dimension (Winch, 2010). Our task as practitioners is ‘to be just’ and act in a moral manner often within the context of collective competence (Boreham, 2004). These characteristics of vocationalism are represented at different levels of ability (foundational, intermediate and higher levels of vocational education) and across different occupational groupings (trades, crafts, technician, associate and professional occupations). This expansive interpretation of the meaning of vocationalism gives us a much broader *lens* to look through when considering the range of educational offerings that could come under the umbrella title of *vocational education*. Indeed, it may also challenge us to re-think and search out a new language for describing the vocational, based upon the concept of ‘useful knowledge’.

It is possible in Scotland to get a broad measure of the scale of vocational education being undertaken using this more expansive interpretation of vocationalism. Firstly, however it is important to give a brief background to the country’s qualification framework in order to understand the different levels of qualifications being offered both in the compulsory school years and in the college and university sectors. Scotland has a unified and co-ordinated qualifications framework that was established in 2001. The *Scottish Credit and Qualifications Framework* (SCQF) provide an integrated system for recognising the volume and level of credit attached

Table 1 National Qualification Frameworks (Source: UNESCO and SCQF)

SCQF	ISCED
Intermediate 1	Level 2 lower secondary
Intermediate 2	Level 3 upper secondary
Standard Grades	Level 3 upper secondary
Higher Grades	Level 4 post secondary non-tertiary

to formal qualifications, both in schools and colleges (Gallagher, 2010). The framework can be compared with the International standard classification of education (ISCED) produced by UNESCO. The notional equivalencies between both frameworks are given in Table 1 below.

The majority of the awards conferred in Table 1 are from the school sector. Level 5 qualifications are normally offered by colleges and universities. The schools in Scotland are the main providers of level 2–3 ISCED qualifications. The majority of young people now stay on at school to complete their secondary education, although they have the option of leaving school at 16 years of age. The SCQF framework qualifications are, by and large, awarded and accredited by the Scottish Qualifications Authority (SQA), which acts as a unified curriculum body for the country. Figure 3 below identifies the academic and vocational subjects at Intermediate 1 by registrations in Scotland in 2009.

If it is assumed that Mathematics and English are core academic and vocational subjects then it can be seen that there is an even spread between the other subjects across the curriculum. In fact, from the data presented in Fig. 3, which is based upon registrations of foundation level qualifications, it is apparent that a significant number of school children are undertaking a mix of vocational and academic subjects at this level. There will of course be differences in the number of registrations of particular subject areas from school to school, but the general trend is apparent nonetheless.

Intermediate 2 level awards are approximately equivalent to the basic general education qualification at ISCED level 3 and are offered to the 14–16 age range in Scottish Schools. The Intermediate awards are taken both in schools and colleges and provide the core of the pre-vocational education courses across Scotland. Figure 4 below gives the number of registrations for academic and vocational subjects for 2009. Interesting the majority of non-core subjects (excluding Maths and English) are vocational and undertaken within schools as part of a mixed curriculum model for this group of pupils.

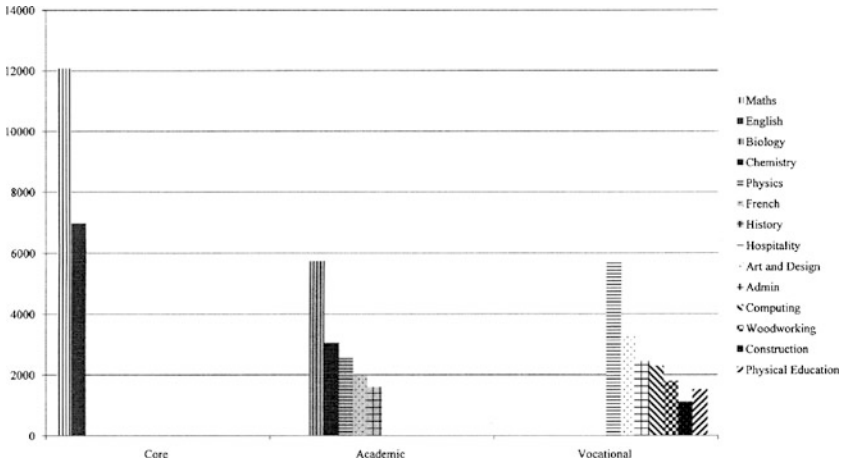


Figure 3 Academic and vocational subjects at intermediate 1 by registrations 2009 (Source: Scottish Qualification Authority Data)

It is also interesting that the combination of subjects in what has been traditionally an academic curriculum within schools has changed over the past decade. A significant number of registrations for Standard Grades (ISCED level 3 upper schools) now include vocational awards (Fig. 5). This again would reflect a combined or mixed curriculum offering of subjects by individual schools within local authorities.

Finally, the number of registrations for Higher Grades (ISCED level 4) for academic and vocational subjects is given in Fig. 6 for the year 2009. This group of pupils have already decided to stay on at school beyond the school leaving age, the majority studying for University entrance qualifications. However, even within this strong academic group, the number of registrations for vocational subjects is significant. This probably reflects the more specific entrance requirements set for the increasing number of professional and associate professional degree programmes at universities.

In summary, at every level of the school curriculum there has been a significant growth in vocational education subjects. These offerings are either traditional academic subjects that have been adapted to include a stronger element of ‘use knowledge’ (product design and information systems) or entirely new vocational subjects like hospitality, business studies and construction. They are normally taught as part of a mixed curriculum and can be studied in school or colleges or through col-

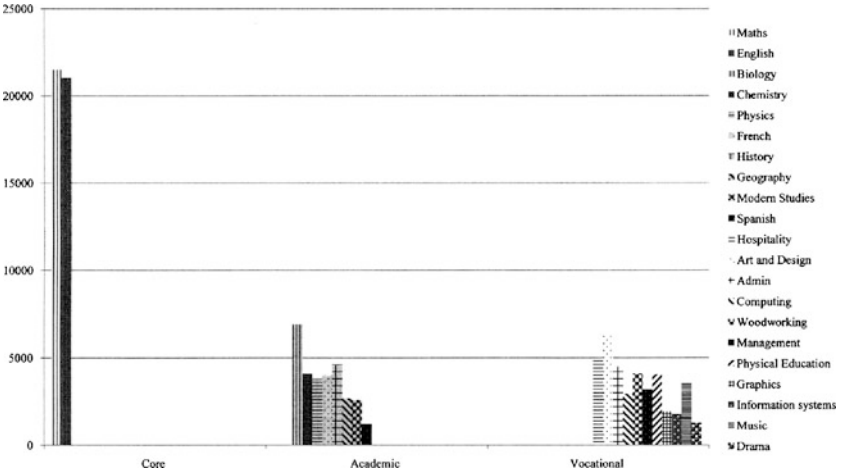


Figure 4 Academic and vocational subjects at intermediate 2 by registrations 2009 (Source: Scottish Qualification Authority Data)

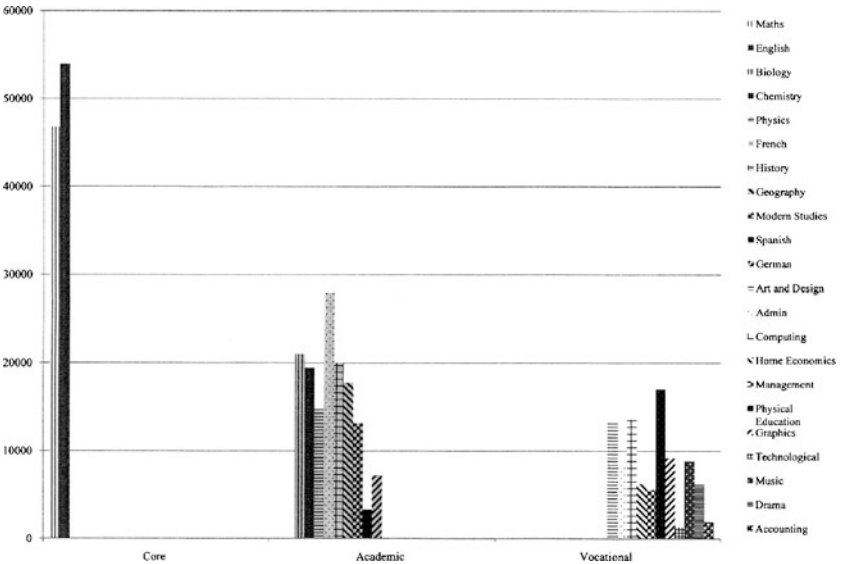


Figure 5 Academic and vocational subjects at Standard Grades by registrations 2009 (Source: Scottish Qualification Authority Data)

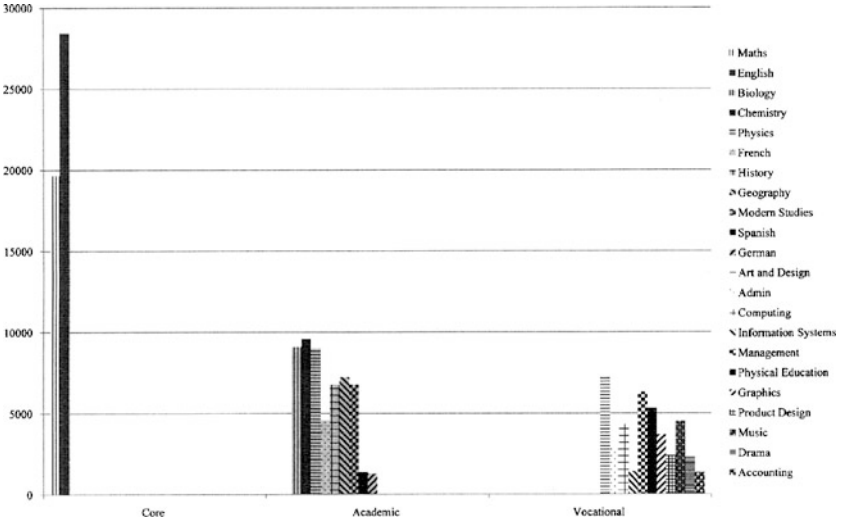


Figure 6 Academic and vocational subjects at Higher level by registrations 2009 (Source: Scottish Qualification Authority Data)

lege/schoolpartnerships. Although the vocational subjects are predominately taken at intermediate levels they are beginning to be studied at higher levels through more vocational orientated academic subjects.

The Scottish Further and Higher Education Sectors

As elsewhere in Europe, the number of pupils progressing from school to post-compulsory education in Scotland has grown considerably (56% of school leavers now enter further or higher education compared with 40% in 1992/93 (Scottish Government, 2009). However, this period also saw fewer young people directly entering employment and work-based training. Numbers entering government-sponsored training programmes fell from 19% to 4% of the school leavers' cohort. Whilst the major work-based training route, apprenticeships, witnessed significant growth (Canning and Lang, 2004), numbers on such programmes remain relatively small: in 2008 there were just over 30,000 trainees on apprenticeships in Scotland. Overall, the work-based option for school leavers has become less significant and most young people undertaking VET study at a Further Education (FE) college.

While Scottish colleges have diversified, in many ways the VET sector has become more 'homogenised' since devolution, with FE colleges becoming the most significant institutions. However, it is important to note that Scotland has traditionally suffered from low participation rates in VET and, though curriculum policy changes have attempted to bridge this gap, VET has largely remained marginalised within Scottish policymaking.

In Scotland there are 43 FE colleges serving around 350,000 students. The dominant subject areas are computing, social sciences and health. The majority of students are female (53%); approximately 20% of students come from the most deprived areas, with 14% of the overall total having some form of disability. Scottish FE colleges offer both non-advanced and advanced qualifications, the latter constituting 26% of higher education provision in the country (Gallacher, 2009). Scottish colleges have been semi-independent organisations since they were removed from local authority control in the early-1990's; they are now directly funded by the Scottish Funding Council. Their semi-autonomous status has led to increased competition, although more recently there has been some emphasis on cross-institutional collaboration. The majority of enrolments at FE level are for vocational courses. In 2004–2005, vocational enrolments accounted for 86% of the total. Vocational enrolments have increased by 82% since 1994–1995. In fact the further education sector has become the most important destination for post-compulsory education students. The college provision is overwhelmingly vocational and increasingly provides a progression route into the university sector for higher level vocational programmes.

There has been a substantial increase in the number of young people participating in Higher Education (HE) in Scotland. The actual level of participation is measured by 'The Scottish Age Participation Index' (API). For a given year this is defined as:

... the number of young Scots aged under 21 who enter a full-time HE course for the first time in that year taken as a percentage of the population of 17 year olds at 31 December in the same year'. In simple terms it is an estimate of the share of 17 year olds in the population who, can be expected to enter HE for the first time before their 21st birthday, if current trends continue... (Scottish Government 2010c, p. 10).

In 2008–2009 the API increased to 43.0%. The API for females is 48.8%, compared to 37.5% for males. Initial participation continues to be greatest at Scottish Higher Education Institutions and at first degree level. In 2008–2009 there were 279,615 students in Higher Education (HE) in Scotland. In terms of subject areas the largest number of students' registrations was in Business Administration (44,530), Subjects Allied to Medicine (33,680), Social Studies (24,290), Engineering

and Technology (22,940) and Creative Arts and Design (17,220). The least popular subject areas were in the general arts and languages. In terms of graduate destination data the majority of students found employment in managerial, professional and associate professional occupations:

In 2008/09 of the full-time first degree graduates who were employed in the UK, 28 per cent of these posts were classified as Associate professional & technical occupations, compared to 29 per cent in 2007/08, 31 per cent as Professional occupations, 33 per cent in 2007/08, 9 per cent as Administrative & secretarial occupations, the same as in 2007/08 and 13 per cent as Sales & customer service occupations, 11 per cent in 2007/08 (Scottish Government 2010c, p. 11).

It is estimated that 30% of graduates are employed in Health, Social and Community Work, 17% in Education, 9% in Public Administration. Elsewhere, in the service sector, 16% are employed in Finance and Business and 15% in Retail and Leisure. This compares with 7.6% of graduates being employed in Manufacturing and Construction. Clearly, the vast majority of graduates in Scotland are employed in the service sector and in professional, technical and associate professional occupations.

Discussion

If we continue to interpret vocationalism very narrowly, then a very limited number of jobs would fall within this category in any advanced post-industrial economy. Strictly speaking, in our case study country, this would only account for approximately 11% of the working population. Indeed, these particular skilled employees are forecast to decline in overall numbers and also to become a much more heterogeneous group, many being self-employed. This is not to minimise the contribution of this important segment of the labour market, but simply to acknowledge that in any post-industrial society, the growth in employment will come from a mix of professional and associate professional occupations and semi-skilled jobs in the service sector. The image of an 'hour glass' is the appropriate one in this context.

As the structure of the labour market is transformed in a post-industrial economy, then the way in which we think about vocational education has to change. In the UK, this means understanding vocationalism as the application of useful knowledge. One not devoid of meaning, or theory, but rather one predisposed to knowing the world through acting upon it. Indeed, one that combines both use and meaning. This requires us to re-conceptualise our understanding of what constitutes vocational education. It is not a failed alternative to a broad based liberal education.

Rather, it is a 'difference in kind' that involves a range of material, discursive and normative practices. The argument put forward in this chapter is that the vocational, defined here in more expansive terms, has in effect become the mainstream. The majority of students in further and higher education now embark upon a vocational course, and vocational alternatives within schools have become commonplace.

Perhaps, it is time to find a new language to express these different interpretations of vocationalism. The term vocational is closely associated with a modern industrial era, with a male dominated notion of skilled labour and, in particular, with the construction industry. It has also become associated with the pedagogic practices of traditional apprenticeships. However, it can be argued that this language of vocationalism has become outdated, and is rarely used by young people. In fact, in the US the term has already been replaced by a focus on careers and development. It no doubt still has a currency within the educational and academic community in the UK, but this is often based upon an historical debate that is trapped within a discourse of 'parity of esteem' between academic and vocational subjects. However, it can be argued this is no longer a useful debate, given the demise of many of the qualification frameworks that formed the 'new vocationalism' of the 1980's and 1990's. Interestingly, the only mainstream qualification structure to continue into the twenty-first century has been the re-branded concept of Modern Apprenticeships. This is an example of finding a different language which combines the new with the old and re-invents itself for a post-industrial era. The concept of useful knowledge is of value in this context, as it groups the new professions together, including associate and technical occupations.

Returning to the image of the 'hour glass', it is important to identify the type of pedagogical practices that are necessary to support the range of occupations that are required for a post-industrial economy. For the professional, managerial, associate professional and technician positions, the majority of learning experiences are based upon tertiary education provision with a work-related component. This will normally be a placement or an internship involving an employer. This may happen at undergraduate or postgraduate level, following an initial period of general education. There has been significant growth in this type of provision over the past twenty years with positive outcomes for employers. At intermediate skills level, the traditional apprenticeship will still be available but with increasingly reduced numbers of apprentices, given the shift away from manufacturing and construction. This type of training will primarily be 'work-based' with employer needs becoming the most important factor in determining the level of demand for apprentices. However, the state will have a role in developing new forms of learning in the service sector, where there has been no history of formal apprenticeships. These 'work-related' learning opportunities are more likely to be school and college based, and involve a signif-

icant educational component. A particularly important dimension of this type of learning will be to ensure that basic literacy and numeracy levels are in place, and that there are opportunities for progression to ISCED level 4 awards and above.

In international comparative terms, Scotland will remain highly dependent on the expansion of new service based industries, given the steady decline in its manufacturing base. This means having a highly responsive labour market and financial services sector to sustain such rapid innovation and technological advancements. It will also require an ever increasing investment in its public services, given the demographics of such economies. In comparison with other countries like Germany, that has a strong manufacturing sector, Scotland will not require a similar number of intermediate skilled jobs. Given this eventuality, there is simply not a need to replicate a successful 'Dual System' of apprenticeship in Scotland.

In this contribution I have argued the case for re-conceptualising vocational education. I have introduced the idea of 'useful knowledge' and linked this to a more expansive definition of vocationalism in a post-industrial economy. The image of the 'hour glass' has come to represent a diverse and stratified labour market, requiring both a highly skilled labour force and, increasingly, a well educated and adaptable group of employees within the service sector. It has also been argued that there is no need to replicate a 'Dual System' of apprenticeship in such an economy. Instead, alternative pedagogic practices should be considered, involving placements and internships for professional, managerial, associate professional and technician graduates. Additionally, we will need to continue to expand vocational education provision in mainstream secondary schools, as part of a mixed-mode curriculum for all pupils. In order to achieve such a radical re-think of the nature of vocational education, we may need to find a new language to express these ideas, one that can embrace the notion of useful knowledge.

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The Transition from Vocational to Higher Education from the Perspective of Higher Education Admission Staff

Hubert Ertl Geoff Hayward and John McLaughlin

Introduction

Internationally there are ongoing attempts to increase both the participation rate in Higher Education (HE) and to widen access to underrepresented groups. On the part of the individual this pressure emanates from a growing realization of the importance of a university level education to access well paid, interesting jobs. From a government perspective, investment in increasing the number of students entering HE is fuelled by the belief that this will increase productivity and economic growth, while also attracting inward foreign investment by increasing the pool of skilled labour (Brown et al., 2011).

For example, in the UK context a central tenet of New Labour's social policy was that economic efficiency and social justice run together, a notion that seems unchanged in the policies of the current Coalition government. Employees are construed as actors striving to make themselves marketable in a more flexible labour market:

What all this means is not that the role of Government, of the collective, of the services of the State is redundant; but changed. The rule now is not to interfere with the necessary flexibility an employer requires to operate successfully in a highly fluid changing

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economic market. It is to equip the employee to survive, prosper and develop in such a market, to give them the flexibility to be able to choose a wide range of jobs and to fit family and work/life together (Blair, 2007).

The state's role is thereby reconceptualised primarily as ensuring adequate opportunities for individuals to develop human capital rather than, say, regulating the labour market. Such a policy vision is predicated on a belief that:

1. The development of more diverse educational opportunities beyond the age of 16 will increase the participation rate of learners beyond compulsory schooling, a decisive pre-condition for increasing and widening participation in HE (see for instance Education and Employment Committee, 2001, p. 33);
2. Any increase in educational participation and attainment will produce both individual and social returns on investment in further education and training.

However, such expansion implies the need to support the progress of those from pre-HE learning pathways that have not supplied a large number of HE students in the past, for example those in vocational and education training pathways. The following extract from the UK's Report of the Admissions to Higher Education Steering Group (AHESG), led by Steven Schwartz, pin-points the connection between the UK government's goal of increasing the proportion of hitherto under-represented groups in vocational learning and then supporting their progression into HE with the admissions processes adapting to take this connection into account.

... while admissions processes today continue to benefit from careful planning and management, there is a need to ensure that they respond appropriately to a system of mass participation by a diverse pool of applicants entering HE via a variety of routes. This need is particularly pressing in view of the Government's commitment to expanding the provision of vocational learning pathways and to increasing and widening participation in HE (AHESG, 2004, p. 19).

Against this background, this paper analyses the practice of admissions at a number of HE institutions in the UK, focusing primarily on less selective institutions and applicants with vocational learning backgrounds. In order to set the scene, some historical background is needed.

Prior to the 1992 Education Act, UK HE was arranged into Universities on the one hand and Polytechnics and a variety of Colleges of Higher Education on the other. This so-called binary divide was abolished by the 1992 Act with Polytechnics and increasingly Colleges of Higher Education adopting the title of University. Those HE institutions that were universities prior to 1992 are termed pre-92 Univer-

sities and are typically more selective in terms of recruitment than those that became universities following the 1992 Act, the post-92 Universities. Such institutions are in the front-line of the push to widen participation in HE by, *inter alia*, admitting sizable numbers of students with vocational qualifications (Hoelscher et al., 2008). Therefore, these institutions are of particular interest if one aims at achieving what the Schwartz Report calls for, namely a better understanding of the important role of admissions processes in the interplay between vocational pathways leading to HE and the aim of widening participation.

Background – the Politics of Widening Participation

The debate on widening participation in HE in relation to Vocational Education and Training (VET), needs to consider two issues. First, educational participation beyond the compulsory school age has increased in the UK since 1945, with a massive increase in participation in full-time provision between 1985 and 1994 (Hayward, 2006; Hayward et al., 2004, 2005, 2006). The increase can partly be attributed to the increased availability of Level 3 vocationally-oriented qualifications aimed at 16-year olds. Such qualifications are increasingly marketed as providing a means for progressing into HE, so constituting an important component of attempts to widen participation. Expansion of post-compulsory participation in education was seen as a decisive pre-condition for widening participation in HE (see for instance Education and Employment Committee, 2001, p. 33 and HEFCE, 2000). However, while such expansion might be a necessary condition for increasing participation in HE, empirical studies suggest that it is not in itself sufficient. For instance, the empirical study of 13 countries by Blossfeld and Shavit (1991) comprehensively negates the thesis which assumes ‘that educational expansion results in greater equality of educational opportunity’ (p. 29). In terms of access to HE, despite the overall expansion of the sector, the incremental growth in student numbers remains greatest for middle class students holding traditional academic, GCE A-level qualifications (Ball, 2003; cf. also Sutton Trust, 2005).

The second issue is that the increase in participation in post-compulsory education in recent decades suggests that the expansionist aims have been achieved in secondary education to a certain degree, partly by a substantial increase in participation in vocationally-oriented programmes. However, an US study of educational participation concludes that: ‘vocational education at the secondary level ... does inhibit students’ chances of continuing on to college and as such, it probably inhibits their chances of reaching the professions and most prestigious occupations’

(Arum and Shavit, 1993, p. 20). The same conclusion was reached in a more recent study of 15 countries (see Shavit et al., 2007). Furthermore, investigations into the educational value of many of these qualifications in terms of their currency for further progression have concluded that they de facto only offer a 'mirage of wider opportunities' (Pugsley, 2004, p. 28; see also Connor et al., 2006; Hayward and Williams, forthcoming; Vickers and Bekhradnia, 2007; Wilde and Hoelscher, 2007; Wolf, 2011). Instead, each wave of new vocationally-oriented qualifications has contributed to the overall tendency toward educational credentialism.

Nonetheless, within current UK policy a key lever for raising the perceived value of vocational qualifications is to ensure that they provide a means for progressing into, and providing a solid basis for study in HE. Typically this policy challenge is framed in terms of the acceptability of vocational qualifications to HE with the social perception of vocational qualifications by young people and their families being based, in part, on the signals that emanate from the HE sector (Pugsley, 2004).

However, little is known about the transition into and progression within HE of those holding vocational qualifications. Therefore it seems timely to investigate whether growing participation in VET has resulted in increasing participation of people with a vocational background in HE in the UK and whether this has, in turn, contributed to widening participation in terms of people from socio-economic backgrounds and/or regions that had tended not to take part in HE before. Existing studies in this area (cf. for instance, Ainley, 1999; Bynner and Roberts, 1991; Gokulsing et al., 1996) are too old to provide an overview of the current situation.

This paper utilises data from the project *Degrees of Success: The transition between vocational education and training and higher education* which investigated whether growing participation in VET has resulted in increasing participation and successful progression, of people with a vocational background in HE. It draws on an innovative combination of qualitative and quantitative research methods to develop a deeper understanding of issues significant for students who are making the transition between VET and HE, and relevant for the wider policy debate on widening participation in HE.

Degrees of Success used the Higher Education Statistics Agency (HESA) undergraduate dataset for 2003/04, matched with corresponding UCAS¹ applications dataset, for the quantitative analysis of transition patterns from VET to HE. The

¹ UCAS is the organisation responsible for managing applications to higher education courses in the UK. The UCAS tariff is the system for allocating points to qualifications used for entry to higher education. It allows students to use a range of different qualifications to help secure a place on an undergraduate course. For instance, the highest grade (A*) in an A level counts for 140 UCAS tariff points (see http://www.ucas.com/students/ucas_tariff/tariffables/).

large-scale administrative datasets allowed exploration of the distribution across institutions and subjects of students coming to HE via different educational pathways. This analysis was supplemented by case-study work at five HE institutions. The macro-level perspective of the factors that influenced student distribution across HE institutions was thus combined with a student-level perspective on institutional and subject choice. The five institutional case studies included two surveys with the entire intake of students in three subject areas (business studies, nursing and computing) for the 2006/07 academic year. The case studies also included interviews with students, lecturers and admissions staff.

Data and Data Analysis

Since the analysis of most of the data sets generated by *Degrees of Success* has been reported elsewhere (Ertl et al, 2010; Ertl and Hayward, 2010; Hayward and Hoelscher, forthcoming; Hoelscher et al, 2008) this contribution focuses on the interviews conducted with admissions staff. Overall, fifteen interviews were conducted with staff responsible for admissions for three courses (business, computing, nursing) at five institutions, including two Further Education Colleges (one in Scotland, one in England), two post-1992 Universities (one in Scotland, one in England) and one pre-1992 University in England.²

The interviews sought to understand how admissions procedures are conducted, which criteria are used for selecting students and which types of information are used to make admissions decisions. They included a number of questions on issues affecting the probability of transition from VET programmes into the HE context. The interviews were semi-structured, allowing flexibility to follow up the particular insights and areas of expertise of responsibility of interviewees.

The process of analysing the data from the interviews aimed at going beyond simply reporting the verbal exchange between participants and to interpret the meanings of the interviewee's responses in the context of the questions raised by the *Degrees of Success* project. Interpretive approaches to data analysis must be clear, systematic and transparent (Kvale and Brinkman, 2009); these principles guided the development of the analytical framework. In the context of this study, data analysis has been a 'continuous and iterative enterprise' (Miles and Huberman, 1994, p. 12). The data derived from the interviews were analysed adopting the three key stages described by Miles and Huberman (1994): data reduction, data display and drawing conclusions.

² For details on the sampling of subjects and institutions see Ertl and Dunbar-Goddet (2007).

After transcribing the interviews and familiarisation with the data, data reduction consisted of a number of steps including the omission of irrelevant dialogue (ranging from friendly small talk to brief discussions of aspects of student life). The second step involved identifying key phrases, ignoring the talk which serves to set up the key point. The third step of data reduction involved assigning various codes to represent the databits. Codes were developed inductively through the familiarisation and continued analysis of the data. Simple descriptive codes, illustrating participants' roles within the admissions office and common admissions criteria, were the first to emerge. These codes were useful for condensing lengthy descriptions into more manageable measures of data. Going beyond simple description, interpretive codes were assigned to databits which illustrated certain themes or concepts.

Once codes and concepts became more concrete, the frequency of each code and category was recorded, keeping in mind the type of HE institution and the course of study represented by the admissions staff member. This was done to understand the relative importance of different themes in different admissions processes. The distilled databits were then displayed in a series of conceptually clustered matrices for each respondent, each type of Higher Education Institution (Further Education (FE) college, pre/post-University, etc), each course (business, computing, or nursing) and ultimately into a comprehensive display. The displays facilitate the ability to draw conclusions from the data. A truncated example of this approach, using only one theme (retention) for three courses (computing, business and nursing) at one institution (Scottish FE College), is shown in Table 1.

These displays facilitate data analysis and drawing conclusions from the data. Similar displays were created for each institution and each theme that emerged from the data. Through this process, consistent and valid results began to emerge from the raw data. The following section presents those results most germane to the current paper's focus.

Results

Institutional Differentiation and Standard

Each respondent discussed a range of criteria that were considered in the process of selecting students. Although academic and non-academic criteria were used in the evaluation of applications at each institution, there were significant variations in the expectations between institutions what we term 'horizontal differentiation'. There is

Table 1 Example of analytical display

INSTITUTIONAL PRIORITIES – Scottish FE College	Analysis
<p>Retention</p> <ul style="list-style-type: none"> • <i>A number of students will have to drop out because they can't afford, they'll have to go out and work (Computing)</i> • <i>We have an attendance, well we have an attendance policy anyway, so students who are falling away a bit, we offer them advice to come in a speak to us (Computing)</i> • <i>If you have, um, what we call a 'sap', at the end of the year, if 50 per cent or fewer students pass the course, we put into place an action plan at address it and reverse it for the following year (Computing)</i> • <i>They're going to have to be committed to attending the classes, paying the fees (Business)</i> • <i>From the employer's point of view, they are quite often following them up, they're checking their attendance, seeing if they're coming along to the college (Business)</i> • <i>We just interview all the time, cause you get, come the August intake, they're be a lot of people who just withdraw, so, um, that's how we just keep it back up with people who can come on the course. (Nursing)</i> 	<p>Retention is a key issue for each department at this College, but the departments manage this risk in different ways.</p> <p>For computing and business, drop-out rates are closely linked with the ability to pay for the course.</p> <p>The computing department provides support for students upon their arrival. They also adapt their practice through the creation of 'action plans' which address student numbers and retention by influencing future admissions cycles. For the business program, retention and financial risk is mitigated by admitting students with sponsorship from their employers. In this way, risk is diffused from the College and onto the student and the employer.</p> <p>For nursing, retention has less to do with finances (perhaps due to the bursary scheme). Other nursing programs indicate a 'change in heart' or personal problems as retention risks. The Nursing programme at this College manages these risks through continuous selection and semi-annual entry points.</p>

a supply and demand dynamic behind this type of differentiation. The pre-92 University is typically a selective institution with high standards and the opportunity of

choosing from a number of applicants for each place they have available, the number of places being limited according to a centrally applied funding formula operate by the Higher Education Funding Councils. Post-92 Universities and colleges involved in the study were, on the other hand, primarily recruiting institutions and had necessarily lower entry requirements for a variety of reasons. Respondents from recruiting institutions cited lower entry requirements as a way to remain as accessible as possible, thereby promoting social mobility by opening the doors of HE provision to applicants who would have struggled to gain entry to university in the past. In practice, this means that recruiting institutions are more open to considering qualifications other than academic GCE A level qualifications using data on equivalence between qualification types supplied by UCAS for example.

‘We are signed up to widening participation, so we look at equivalences [between qualifications]’ (Nursing Admissions, English FE College).

Lower entry requirements and the willingness to consider a variety of different types of qualifications also widens and enlarges the potential applicant pool, ensuring that the institutions have enough applicants to meet course enrolment targets. However, this approach may simply replace one institutional risk (i. e. not filling available places) for another – increased risk of drop-out and non-completion of courses. Both carry severe financial risks in a system where funding follows the students and is dependent to some extent on students completing their degree programmes successfully. Efforts to widen participation have succeeded in bringing in applications from students at the lower end of the achievement spectrum with a concomitant increase in the risk of drop out and non-completion. Furthermore, as the door to HE widens, admissions staff may encounter applicants with unfamiliar qualifications with no track record of supporting successful progression into HE, making it even more difficult to make a decision on the candidates’ suitability for a course. This is particularly the case for students with vocational qualifications. These students were regarded by many interviewees implicitly or explicitly as risky propositions, in terms of survivability and retention, and requiring closer scrutiny of their suitability as potential students during the admissions process.

Academic Criteria and Qualifications

Each of the five institutions relied on a variety of academic criteria, including qualifications obtained, to act as proxies for their applicants’ intellectual abilities. As institutions vary in selectivity, each respondent offered a different set of academic guidelines which acted as the baseline for evaluation, clearly identifying the horizontal differentiation between HE providers. For example:

‘... the entrance qualifications that the youngsters are offering would be the Scottish higher certificate. ... They’re mostly offering highers. At the moment, the so-called going rate would be two B’s and two C’s at higher’ (Business Admissions, Scottish Post-92 University).

‘They’re [most applicants are] 18, they’re UK students, they’re either taking their A-levels or the International Baccalaureate’ (Computing Admissions, English Pre-92 University).

‘Standard entry criteria is basically one Scottish Higher at C or above for a HNC [Higher National Certificate], two at C or above for an HND [Higher National Diploma], or three Cs and above for a degree program’ (Computing Admissions, Scottish FE College).

‘So, uh, minimum qualification [for diploma] would be an NVQ-2 [National Vocational Qualification at level 2], with a GCSE [General Certificate of Secondary Education] grade C or above, and at degree level it would be 200 UCAS points’ (Nursing Admissions, English FE College).

Respondents were quick to detail, early in the interviews, the academic standards which represented the minimum criteria for admission. Perhaps understandably, the academic expectations varied across institutions and courses. Nevertheless, each admissions staff member made assurances that academic criteria were a key piece of the evaluation they were making as to the suitability of applicants for enrolment on the programmes that they were offering.

Admissions staff at each institution also discussed the relevance of certain qualifications in the context of the evaluative process. Generally speaking, admissions staff appreciated relevant qualifications for all candidates, but relevant qualifications appeared to be especially important for students with a background in vocational learning. Responses from recruiting institutions seemed to indicate that level three academic qualifications, regardless of the subject, were suitable for admission.

‘We have this notion here, in the computer science department that we don’t really, um, stipulate what type of A-levels people do before they come on to the program. So, uh, an A-level is an A-level is an A-level, OK?’ (Computing Admissions, English Post-92 University).

‘Somebody who has got three A-levels and their A-levels were in retail to start with doesn’t mean they can’t be a nurse, so it would be awful to turn someone away because they’ve got an A-level in history and not in biology. It denotes for us a level of study that would make them able to cope in our course’ (Nursing Admissions, English FE College).

These responses illustrate a generous appreciation for A-levels in the admissions process at these particular institutions, and seem to confirm Stanton’s idea of the ‘royal route to university’ (Stanton, 2008, p. 9). A-levels appeared to be the most

valuable currency in these admissions processes, but these offices also frequently interact and evaluate candidates with less traditional qualifications.

Other work in the *Degrees of Success* project has shown that HE teaching staff often have little knowledge about vocational qualifications relevant to the subject they teach. This, in turn, has serious consequences for the way teaching staff interacts with students from vocational backgrounds, ranging from a lack of relevant learning support to neglecting the particular types of knowledge that students with vocational qualifications bring to HE (see Ertl and Hayward, 2010). The lack of familiarity with certain qualifications at the level of HE institutions represents a particular risk for equal access to HE.

Unfamiliar and Non-traditional Qualifications

Each member of admissions staff acknowledged that they routinely encountered applicants with unfamiliar qualifications in the course of their application review. According to the respondents, mature applicants, international students and applicants with vocational qualifications make up the majority of applications with unfamiliar qualifications. Which qualifications are regarded as ‘unfamiliar’ or ‘non-traditional’ varied between the case study institutions.

‘What can often happen is, particularly in computing, is that the students come with perhaps not the most normal of qualifications’ (Computing Admissions, English Pre-92 University).

‘We have taken mature students who haven’t got, who haven’t got, what we would say is the traditional qualifications’ (Nursing Admissions, English FE College).

A particular problem for UK HE admissions staff is that they have to rely on predicted grades to make offers of places to a student. This means that the only information they have available is what a student’s current teachers think they will achieve in the qualification(s) for which they are studying. This leads to considerable uncertainty about the information being provided. Here an admissions tutor questions the validity of predictions in an advanced vocational certificate of education (AVCE) given an applicant has done poorly on examinations (GCSEs) taken two years previously.

‘You get a lot of applicants that have really done badly on the GCSEs, may only have one (acceptable GCSE) and the rest are Fs and so forth, but they’re predicted at AVCE two C’s, and that actually does worry me’ (Nursing Admissions, English Post-92 University).

Poor, unfamiliar and non-traditional qualifications seem to create an air of uncertainty within the evaluation process. Divergence from the normally encoun-

tered standard qualifications being used by applicants to support progression to HE clearly involves taking account of a variety of risks. Admissions staff have developed a number of behaviours to manage the risk posed by non-traditional qualifications. Sometimes the simplest way to manage risk is to deflect it or distribute it to another person. One of the key risk management strategies that emerged at each of the institutions involved an upward diffusion of risk. When faced with 'risky' applicants, admissions staff members sought the advice of senior admissions professionals or academic staff. In some examples, high-risk candidates were identified and passed directly on to supervisors.

'I see something that worries me, that's when it would, again, go to [the admissions supervisor], and I would ask [the supervisor's] opinion ... and if we're unsure at that stage as well, it also involves course directors to find out what their feelings are on a case-by-case basis' (Computing Admissions, English Pre-92 University).

'Applicants that don't fall into that [the standard academic criteria], they meet with the course leaders to determine whether they would gain an entry or not' (Business Admissions, Scottish FE College).

This practice gains the insight of colleagues while redistributing the risk involved in making an admissions decision. If the decision turns out to be incorrect and the student fails to cope with the program, then the blame can be shared among the group of people involved in the decision rather than a single staff member. Often, these senior staff members, concerned with making an appropriate match (and managing institutional priorities), rely on additional criteria beyond qualifications and utilise other behaviours to manage the risk introduced by candidates with unfamiliar academic backgrounds.

Admissions Interviews, Personal Statements and Work Experience

Non-academic criteria offer additional opportunities for gathering information about applicants. They can provide additional context or justification for the recognition of given academic and/or vocational qualifications. In other words, non-academic criteria can help mitigate the risks introduced by applicants with non-traditional qualifications or poor academic backgrounds. The respondents cited interviews, personal statements and work experience as useful tools for learning more about the background and motivation of prospective students.

The purpose of *admissions interviews* is to discover more information about the candidate in order to make a better judgement on the quality of the potential match between courses and applicants. However, the role of the interview differs from

one student to another. For traditional students, institutions expressed an anxiety about incoming students' commitment to the course. Although these students might have the academic qualifications necessary to gain admissions, interviews provided admissions staff with an opportunity to gauge each applicant's commitment to the course. In these cases, the risk is student attrition through a change of heart. The interviews seek to confirm an enthusiasm and a dedication to the subject rather than academic ability.

'As part of the interview process, they will be asked about a topic of business that interests them, so they have to come up with some sort of supposed discussion or rationale about why they are interested in business' (Business Admissions, English FE College).

For applicants with vocational, non-traditional and/or less well known qualifications, non-academic criteria are key components of the admissions process. In one case, at one of the Scottish institutions which assigns a point value to various admissions criteria, the outcome of the interview was four times more valuable than whether or not the student had earned a Scottish Vocational Qualification (SVQ) at level 3. In the absence of traditional or more readily acceptable qualifications, non-academic criteria may be used to gain enough information to make an admissions decision, not least because of the restrictions inherent in applications procedures. These restrictions seem to have an impact on the applications of non-traditional students in particular:

The UCAS form doesn't lend itself very well to actually detailing all the different things that they [mature students] may have done, so I always get in contact with them, usually by email, in fact most of our correspondence is by email. Um, and they may come in for an interview with [the admissions supervisor] (Computing Admissions, English Pre-92 University).

And then there are students who don't have any A-levels, and these are student who I call up and have a consultation with. These are the more mature students, you try to give them the fact that it's very important that you take it seriously and talk through the whole programme with them, and I think that face-to-face contact with the mature students without A-levels helps (Computing Admissions, English Post-92 University).

Often with computers, you know, it's their [mature applicants'] hobby usually, you know they're enjoying programming and so on, so if we can see that that's there, then we can see an ability for them to learn, so that's half the battle, knowing that there's an enthusiasm there (Computing Admissions, English Pre-92 University).

In these cases, the admissions staff members have recognised the knowledge asymmetry. The reliance on UCAS for applications compounds the difficulty for non-traditional applicants seeking entry to the full-time programme. Admissions staff address this problem by employing a different criteria for non-traditional students and students with vocational backgrounds compared to school-leavers.

Where the qualifications fail to reveal the applicants' ability, interviews are used to correct the knowledge gap.

'So the academic qualification gets them (non-traditional students) started, if you like, but they've still got lots of hurdles, ... they all come for interview' (Nursing Admissions, English FE College).

The opportunity to directly interact with individual applicants is regarded as an invaluable tool in assessing the background of the student and the quality of a potential match. The nursing programmes, for example, felt that interviews were absolutely essential in determining whether or not an applicant could be trusted with the responsibility of looking after patients. Interviewing each applicant, however, creates a considerable amount of work for admissions staff and is therefore costly. For most programmes, interviewing every candidate would place an unworkable amount of stress on the resources of the admissions staff. To address this problem, respondents at the other programmes described how they triage applications, identifying borderline applications and bringing those students in for an interview.

Personal statements fulfil similar functions as admissions interviews. Like interviews, personal statements enable admissions staff to discover the motivations behind the decision to study at a particular course. At the most selective institution in the study, the respondent used personal statements to make decisions among similarly qualified candidates. After identifying clearly admissible and clearly deniable students, the admissions staff member at this institution described the role of the personal statement in her programmes' admissions process:

'And that's when we really drill down to what their personal statements are from the middle pile, um, and their references, so yeah, it's more the second stage where we use those' (English Pre-92 University).

Like interviews, personal statements can be particularly influential for students with non-traditional and vocational qualifications. Again, commitment and enthusiasm for the course and subject are the common themes in the evaluation. For the nursing programmes, personal statements were seen as being particularly valuable:

'What I look for particularly more than anything is their supporting statement ... we'd rather see someone actually that hasn't got a wonderful string of GCSEs, but actually can demonstrate on the supporting statement that they want to be a nurse' (Nursing Admissions, English FE College).

'You've got good academic criteria, lovely, and some of them have got very good GCSEs and predicted, very good A-level grades, but if they don't demonstrate commitment to the area that they've applied for in their personal statement, I don't think that it reflects very well' (Nursing Admissions, English Post-92 University).

The personal statement can have other uses as well. Some respondents from the least selective institutions explained that the personal statement is also used as a simple way to assess candidates' familiarity with and use of English language. Despite its usefulness in this regard, the same institutions expressed concerns about the ability to verify authorship of personal statements. As a result, these programmes have developed *ad hoc* entrance examinations in reading and writing to combat against false representation in the personal statements.

Both interviews and personal statements provide opportunities for admissions staff to explore potentially relevant work and life experience that each candidate brings to the table. *Work experience* relevant to the course was consistently cited as a valuable commodity in applicants at each of the institutions. Admissions staff explained that they were more likely to rely on experience for mature students, students with vocational qualifications and those with no qualifications.

'If they left school without any A-levels, maybe without any O-levels, and has [sic] worked in the business environment and has [sic] proved that they can work in that environment, then I'll give them the chance' (Computing Admissions, English Post-92 University).

'Certainly, if they haven't got the formal qualifications to get into [the programme], then we look at the experience that they have and get them on that way' (Business Admissions, English FE College).

'A lot of the time, the qualifications are like 10 years old, so we can't really look at all the qualifications. So, it tends to be that we take them on, on an experience' (Business Admissions, Scottish FE College).

Respondents, especially at the recruiting institutions, felt that work experience could be an effective substitute for qualifications. There was a common belief that students would be able to translate their work experiences into academic success. This rationale was more commonly cited in conversations with admissions staff responsible for computing and business programmes. Representatives from the nursing programmes appreciated applicants with some exposure to the medical field, but tended to rely more heavily on interviews and personal statements to make their admissions decisions. Nevertheless, experience was a factor considered by each programme.

Not only does experience indicate a degree of familiarity with the chosen field, it also confirms some level of commitment. Commitment, as seen in the context of interviews and personal statements, is seen as an all-important quality in prospective students. Similarly, students with a range of work and life experiences were viewed by admissions staff as more responsible in comparison to some school-leavers. Furthermore, there was an understanding of the demands of work and, in some cases, family life compels non-traditional students to develop time-management skills.

‘We have a look at their career to date, um, you can tell a lot from the forms whether they’re motivated to do the course ... and again we’re looking at, well, they’re much older and they know how to balance a college life with a home life and submit course works and meeting deadlines’ (Business Admissions, Scottish FE College).

In some cases, maturity was viewed as proxy for responsibility, and thus perceived as a factor which might mitigate any risks posed by sub-par or absent qualifications. Admissions staff would also seek out and respond to applicants with employer sponsorship. These candidates were particularly safe bets due to a guaranteed source of tuition income, and an additional incentive (in the form of responsibility to their employer) to continue with the programme. Such candidates are highly prized because they satisfy each of the institutional priorities, including enrolment, payment and retention.

Summary and Conclusion

Over the course of the analysis, a pattern emerged in the data indicating a distinctly different set of criteria applied by admissions staff for non-traditional students when compared to traditional school-leavers. Admissions staff relied more heavily on academic qualifications in the evaluation of traditional school-leavers. The average, middle class student dutifully turning in A-levels or other easily recognisable and acceptable academic qualification seemed to be seen as posing little risk of attrition. These students represented a safe bet, and the institutions were keen to respond to them. Non-traditional students, including those with vocational qualifications, needed to go through a longer and deeper evaluation. Since vocational qualifications were perceived to be signalling a degree of risk to future success in HE, additional criteria and sources of information were used to establish a sound basis for the admissions decision. The institutions, needing to meet enrolment targets, aim to bring these students into the programme, but this goal is tempered by the possibility of attrition and the loss of tuition income.

Already in the early stages of the analysis of the interviews with admissions staff at the five case study institutions it became apparent that the institutions were less pre-occupied with admitting necessarily the best students and in many cases were compelled to admit students with weak academic credentials. Risk management behaviour and matching processes, linking applicants and courses, began to emerge as an alternative to the traditional, meritocratic, notion of admissions.

This finding is interesting in the context of the discussion on the notion of ‘merit’ in the Schwartz Report (AHESG, 2004). As the Report was particularly interested in notions of fairness in the admissions process it argued that meritocracy should continue to be the gold standard for fairness in admissions but acknowledges definitional problems: ‘Everyone agrees that applicants should be selected on merit; the problem arises when we try to define it,’ (AHESG, 2004, p. 22). This outlines a key issue for admissions at the five case study institutions as the definition of merit is contentious. Attempting to base a standardised admissions system on a contentious standard is a dangerous endeavour; and the interviews analysed for the research presented here clearly indicate that the standards against which different types of applicants are measured are not consistent across and within HEIs.

Sen (1999) argues that there is a degree of tension in the way that merit is perceived. Merit is a reflection of what a society, an institution or an individual values; a notion acknowledged for the area of education in Michael Young’s satirical *Rise of the Meritocracy* of 1958. However, as discussed elsewhere (Ertl et al., 2010; Hoelscher et al., 2008), UCAS tariff points and traditional qualifications are not evenly distributed among individuals. The mainstream system of HE appears to favour traditional (i.e. predominantly middle-class) candidates with A-levels (Smith et al., 1995), with vocational qualifications not being recognized by large parts of the HE sector as suitable equivalents (see Hoelscher et al., 2008). This existing system is an example of ‘sponsored mobility’, a social system in which the elite class replicates itself through careful selection (Turner, 1960), hearkening back to the *de jure* exclusivity which continues to exist in the present HE sector.

The development of a risk management approach to admissions processes arguably intensified with the explosion of demand for HE access and the later push to widen participation. More students applying to HE programmes require the development of admissions criteria. Efforts to widen participation necessarily mean including more students with qualifications backgrounds other than traditional A levels. This also means that HEIs need to acknowledge that students with vocational qualifications ‘... bring radically different skills, and knowledge to HE than those brought by students with standard qualifications who come from more privileged backgrounds’ (Smith et al., 1995, p. 124).

As the population entering HE changes, admissions criteria must also adapt to respond to the changing applicant pool and the changing needs of the institution. The risk posed by students with weak academic backgrounds, many of whom apply to non-selective institutions (such as the two FE Colleges in our sample), requires an admissions approach with an even greater emphasis on risk management which might be at odds with traditional notions of merit. Further analysis of the data revealed a number of other key issues and observations, including that the parallels

between job matching and HE admissions were quite strong, especially in the use of admissions criteria to address the knowledge asymmetry between the candidate and the institution.

Admissions professionals want to gather as much information on candidates as possible. Admissions criteria achieve this goal to some extent and provide the admissions staff with the information needed to make an informed decision on the candidacy of each student. In this regard, non-traditional students and students with vocational qualifications represent a risk because they present a profile that is inconsistent with the standard admissions criteria. As a result, additional information is gathered through interviews, personal statements and entrance exams. The use of these sources of additional information constitutes a significant difference in how applications from students with vocational qualifications are perceived and processed as compared with applications from students with academic qualifications. Further research on the impact of this difference on the chances of being admitted and on the experience of students of their HE programme is necessary to unpick the connections between admissions processes and outcomes.

The analysis of the interviews with admissions staff also demonstrated that admissions processes vary across the HE sector due to differentiation among programmes and institutions. The notion of horizontal differentiation describes these differences at the institutional level. A selective institution with more demand (applications) than supply (places) has the luxury of being able to rely on traditional notions of merit, closely connected to prior academic achievements, to bring in what are regarded as the best possible students. Recruiting institutions, meanwhile, must make the most of their applicant pools. Vertical differentiation is one approach which routes applicants into different levels of a programme at an institution. This enables institutions to meet institutional priorities while containing and compartmentalising risky students into certain sub-degree programmes. These patterns are clearly visible in the interviews conducted.

Often, programmes will present a 'bottom line' describing the basic requirements for admission. From the interviews, however, it seems that there is a great deal of flexibility in the bottom line and admissions staff will present one image (usually of some 'objective' standard based on merit) while acting differently (selectively applying certain criteria) to ensure that institutional priorities are met. This finding is in line with evidence collected in the work of Pickering and Gardner (1992) which found striking discrepancies in the admissions process between what is said to be done (in line with the principles of transparency) and what is done in reality. Pickering and Gardner attribute these discrepancies to some of the pressures that admissions departments face from their institutions, regarding reaching student number targets.

In conclusion, this part of the work of *Degrees of Success* offers some additional insights on admissions, but more work can certainly be done. It is unconscionable to consider the lack of scholarly literature about admissions, but this research might contribute to advancing the understanding of both admissions practice in general and especially the admissions landscape for non-traditional students and non-selective institutions. As the push towards mass and universal HE continues, the significance of this topic will only increase.

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Asia Including India



Development of TVET in China: Issues and Challenges

Weiping Shi

Introduction

The recent years witness the great development of TVET in China, which is featured with the expanding scale, good quality of school-based vocational education and rapid development of informal training in China (Zhang, 2009). Great efforts, however, are still called for to enhance a sustainable development as some issues and challenges are rooted in the current TVET system. In this paper, the issues and challenges will be examined and some suggestions will be given.

TVET System in China

In China, vocational schools, vocational colleges, as well as various kinds of vocational training institutions, constitute the TVET system, in which formal vocational education is the main component, as outlined in Fig. 1.

The shaded blocks, generally considered as formal vocational education, are a huge body compared with general education and complementing with it.

- The junior secondary vocational education is rather a small share in the junior secondary education, providing vocational education for primary school leavers in some rural areas and special vocational training for the handicapped in urban areas.

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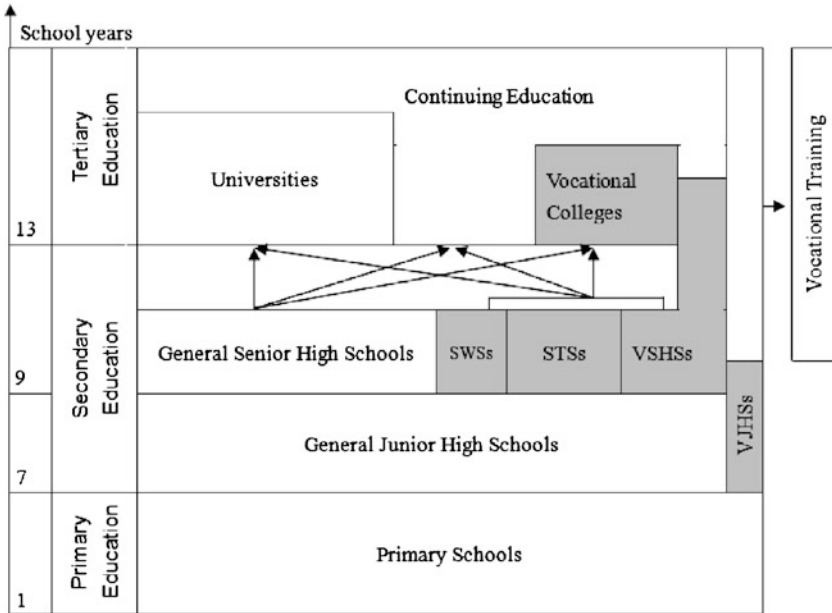


Figure 1 Education in China: basic structure. VJHS: Vocational Junior High Schools; STSs: Secondary Technical Schools; VSHs: Vocational Senior High Schools; SWSs: Skilled Worker Schools. (Source: own illustration)

- The senior secondary vocational education (for children aged 15–18), which is based upon the 9-year compulsory education, is the major part of TVET in China.
- In its first climax of industrialization in the 1950's, the PRC (the People's Republic of China, founded in 1949) established thousands of government-run factories and companies, which were straightly confronted with shortage of skilled workers and hence had to open their affiliated Skilled Worker Schools to train such workers (Fang, 2009). In the so-called 'era of planned economy', SWSs took the major responsibility of vocational education. In the recent 30 years, state-owned factories and companies have been undergoing the process of privatization (or restricting as is called). Many SWSs are regarded as burdens and kicked out of the enterprises. Therefore, the number of the SWSs shrink from 4,477 in 1993 to 3,008 in 2010 and occupies only 21.6% of all TVET schools, but are still common in top manufacturing enterprises (Yang, 2009).

- Unlike the SWSs which are affiliated to enterprises, Senior Technical Schools were originally started by different ministries (or under the supervision of the ministries) to foster technicians for a whole industry instead of particular enterprises. Nowadays, while most of the STSs are supervised by local educational administrations, supports like information, technology and human resources can still be easily obtained from local industrial sectors due to their intimate connections to different industries.
- After its adoption of Open-and-Reform policy to the world, China began its endeavor to restructure TVET system in the late 1970's, establishment of the system of Vocational Senior High Schools being one of the major strategies. At first, vocational courses were added to some selected senior high schools. Later, the whole 1980's saw great amounts of new VSHSs emerge. By the end of 1990, 48.7% of the teenagers who chose TVET attended VSHSs (MOE, 2006). Such schools, mainly funded by local governments and fully serving local communities, are often seen as relatively comprehensive vocational educational agencies, providing fairly extensive selections of majoring for its students, comparing with SWSs and STSs which are more likely to focus on the demands of industries or enterprises.
- There are two types of Vocational Colleges: one is 3-year Vocational College (enrolling secondary school graduates at age of 18) and the other is 5-year Vocational College (enrolling Junior High School graduates at age of 15), and 3-year Vocational College is the majority, mainly developed in 1990's, to train highly-skilled workers (Pan, 2005).
- Vocational training does not form part of the national education system, and is developed through different human resource departments or agencies. Graduates are only awarded relevant vocational qualification certificates or technical-graded certificates (Wu, 2007).

Issues and Challenges of TVET in China

In this part we try to put forward several issues and challenges in current development and reform of TVET in China.

Great Expansion of Secondary Vocational Education versus Student Demographic Change

In recent Five-year National Plans, 'enhancing the development of TVET' is repeatedly mentioned as a national priority in 'building strong human resources'. It leads

to a great leap in the enrollment rate in the TVET schools and colleges, which can be called the Great Expansion of TVET (see Figs. 2 and 3).

As well as the increase in absolute numbers, the leap is especially symbolized by a rough equivalence of general and vocational schools and colleges in enrollments.

The increase and equivalence, obviously targets of policy makers and main achievements in the development of TVET, is now under scrutiny, as demographic data indicates that student population has an inclination to decrease.

In this country, 15–19 years old are the group that are likely to attend senior secondary schools. According to the MOE, the gross enrollment ratio of the senior secondary schools has reached 85.5% by the end of 2010. It is obvious that little

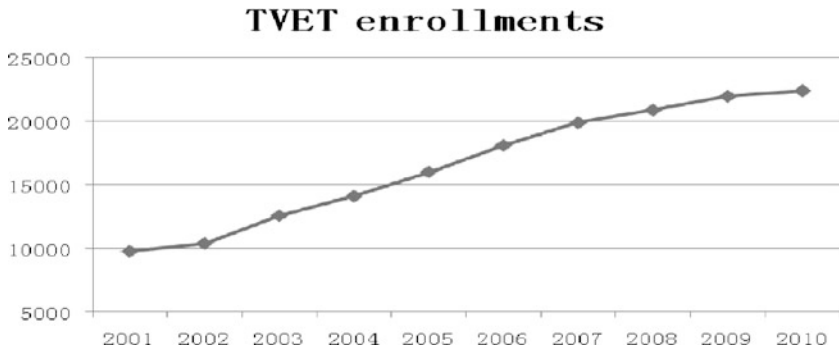


Figure 2 TVET enrollment in China: a speeds increase. (Source: MOE (2011))

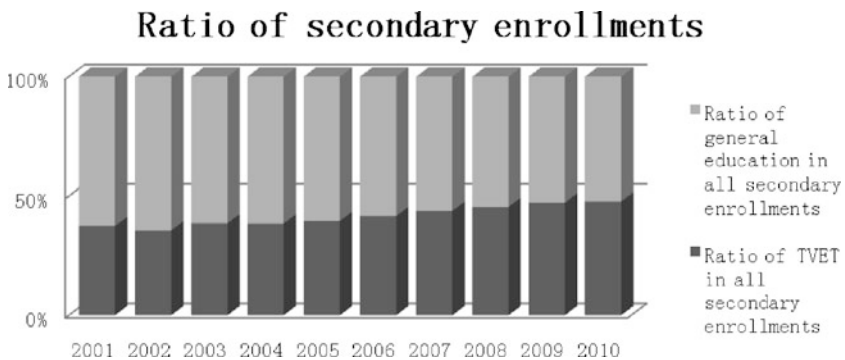


Figure 3 TVET enrollment in China: a balanced increase. (Source: MOE (2011))

can be done to increase enrollments in such demographic and education context. TVET schools and colleges will have to learn to cope with an enrollment declination situation. It is proper time to re-evaluate the effectiveness of this expansion policy.

Governmental Determination to Have Balanced Development of Secondary Vocational Education against General Education versus the Freedom of Parental Choice of Schools

China has almost the longest uninterrupted history of education in the world, which roots in people's mind the value of academic learning. Studying for a vocational purpose is often sneered at. In a survey conducted in 30 vocational schools, only 73.6% of the students interviewed believed they would lead a decent life as workers and 78.6% did not hesitate to answer that they would seek chances of further academic learning if possible. 67.1% of the parents surveyed expressed dissatisfaction about the stratification mechanism, in which academic standards are lifted and half of the junior high school leavers who cannot reach the standards have to be led through the vocational track (Yuan, 2007).

The results reveal the fact that educational authorities' efforts to ensure the Great Expansion are confronted with rooted educational values of the masses. To some extent, the success of the expansion cannot be attributed to the success of TVET, but

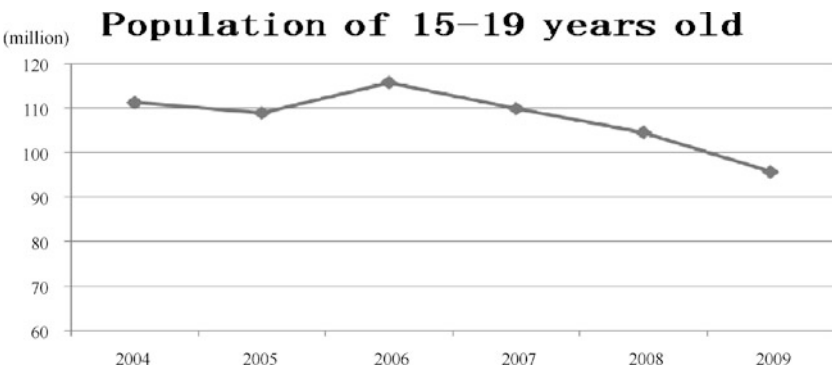


Figure 4 Demographic change in the past six years: 15–19 years old. (Source: NBSC (2011))

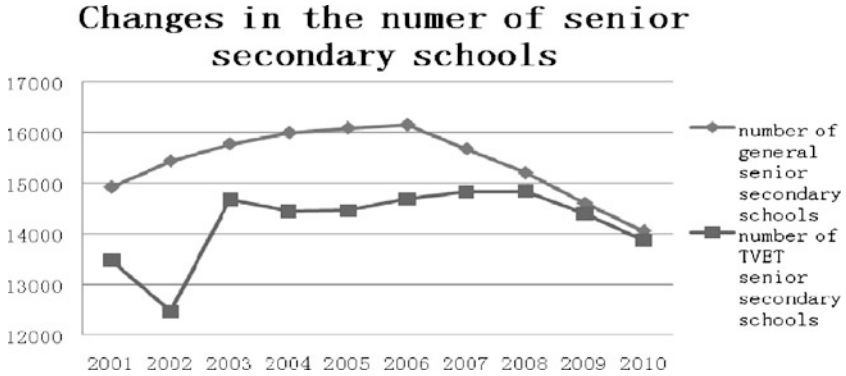


Figure 5 Changes in the number of senior secondary schools. (Source: MOE (2011))

due to limitation to the capacity of academic high schools. Data in Fig. 5, together with Fig. 4, show that TVET schools are deliberately protected in the recent tides of closing and merging of high schools to ensure the equivalence of both kinds of school enrollments. But 81.9% of the students interviewed declared that they attended vocational schools not out of free will but because of refusals from academic high schools (Yuan, 2007).

Thus the educational policy makers come to a dilemma: the nation is faced with great pressure of improving working skills but this idea is unpopular among the masses. The root of the dilemma is in fact the dichotomy between vocational and general education systems. The resolution might be the merging of the two tracks. When the choice is returned to the students and their parents, balance between social demands and personal needs may be reached.

Government's 'Employment-oriented' Training versus Vocational School Students' 'Needs for Further Education'

The national educational authority demands that 'vocational education' should be 'employment-oriented' to well prepare students for the future labor market. The so-called 'employment-oriented' vocational education indicates the authority's anxiety that the nation's vocational education system is hardly linked with labor markets and that the TVET school leavers are always labeled as incapable by employers. As

we have discussed in the previous sector, only one fifth of VET schools make educational decisions according to the demands of labor markets and ensure their students full employment, the others, under the supervision of educational authorities, are loosely connected with employers. The employment-oriented policy, treated as a remedy to low employment rate of TVET school leavers, becomes the dominant philosophy in TVET and has achieved its goal.

Unfortunately, like every policy, the employment-oriented policy is going through some form of transformations. 'Dead-end' effect is one of them – accessing to post-secondary TVET colleges is not encouraged.

As Fig. 1 shows, pathways have been designed to ensure senior secondary students, whether general or vocational, the opportunities to access to tertiary education. Obstacles, however, are created during the whole process of schooling in practice. Only 5% of all TVET senior secondary students are permitted to continue their study in vocational colleges, even smaller ratio are eligible for universities (Shi, 2006).

It has been enthusiastically debated, though seldom publicly, that TVET education is not a synonym to 'employment education' and vocational schools should be multi-functional. It is important that TVET schools not only help students straightly through the process from school to work but are equally responsible to prepare their students for a better tertiary education and a more personalized future.

It's believed that China is entering the era of late industrialization, more flexible and better learned human resources are essential to build a harmony society. As a result, actions must be taken to build bridges over the border between secondary and tertiary education.

Academic Learning Enhancement versus Poor Capability of Learning

As discussed in the previous sectors, most of the students are simply such losers in the academic competition that they have difficulty in basic literacy and numeracy. Naturally, 73.2% of the young learners, as a survey shows, hate mathematics and language courses most (Shi, 2006). The teenagers put TVET educators into an embarrassing context: on one hand, remedial and academic courses must be given; on the other, hatred and incapability of the courses prevail.

To get extricated from the embarrassment, curriculum reformers take such measures as:

- to add the course time for literacy and numeracy;
- to organize unified tests for these subjects;
- to increase the difficulty in learning contents (Jiang, 2009).

The measures are based upon the philosophy that learners will pay special attention to a particular subject when special emphasis is placed on it by educators, as have been proved effective in the general senior high schools. Hence, another embarrassment occurs: more and more time and resources are spent but achievements are little accomplished.

The naked fact might be totally forgotten that in the shade of their previous learning experiences, the young learners are not capable of suiting themselves to traditional academic learning patterns. Any attempt to adopt traditional academic teaching modes is doomed to fail.

In vocational curriculum reforms, the most crucial part is to change the contents of learning and the way of teaching, and let students feel the contents are interesting to learn, the process of learning is enjoyable, and learning can be paid with good results. Thus, literacy and numeracy should be taught with job skills and life skills or in relevant with the world of work and the world of life. At the same time, we had better change teachers' view of teaching, behavior of teaching and way of teaching, which could be the key to the success of curriculum reform.

Government Plan to Strengthen the Practical Skill Training versus Poor Foundation for its Implementation in Vocational Schools

Since TVET in China is defined to be employment-oriented, educational authorities take initiatives to equip TVET schools with up-to-date facilities for skills training. Great amounts of money have been invested in the construction of so-called 'in-school skills training bases', where students learn to operate sets of machines or even complete assembly lines.

But it's still not sufficient compared to the demand of practical skill training. Now it is still common to see in vocational schools: teachers who teach job skills are lack of the working experience themselves; practical skill training facility in vocational school is not sufficient to achieve its purpose, which is especially so after the great expansion of vocational school education; and school learning is not well integrated with workplace learning, for the industries are not very much supportive in this integration (Hao, 2005).

Chinese TVET system is mainly school-based, which will not be changed in a certain period of time. In such a framework, no matter how 'modern' the learning content is, it is no easy for vocational school to keep up with the knowledge and skill changes in workplace; no matter how 'skilled' the vocational school teachers are, it is difficult for them to keep up with the new development in workplace; no matter how 'advanced' the training facilities in vocational schools are, it would soon be out-of-date. These are the 'born weakness' within the system! The only way out is to develop partnership between schools and the industries. Modern apprenticeship or 'dual system' might be a better solution!

'Key Vocational Schools/Colleges' versus 'Model Vocational Schools/Colleges'

In the past four years, more than 100 'Model Vocational Colleges' have been selected and another 1,000 more 'Model Vocational Schools' will be added in the next three years, with huge funding from the central and regional government. The aim of the policy is to foster 100 top vocational colleges and 1,000 top vocational schools with large investment both in hardware and software.

The lure of great funds agitates every potential school/college, the decision-makers of which cannot afford to stop to think for a while what 'model' really means. Among the ten principals of TVET schools/colleges in which we conducted a survey, eight admitted, in private of course, that they cared little about what a model school/college was supposed to be, and that they were mainly attracted by the large amount of investment.

In Chinese, being model means setting the standards that everyone should abide by, so models cannot be special but common. With special funds, special human resources and special policies, the project will undoubtedly produce top-class schools/colleges. There are doubts, however, that all the other schools/colleges can follow the pattern and satisfy the standards. It is believed that these specially selected schools/colleges can be key ones instead of role models for others. We argue that 'model vocational schools/colleges' should not be 'special'; they should be a 'model' in successfully solving the common issues and problems in current development and reform in most of vocational schools/colleges in China. This concept should penetrate in the whole process of the construction of model vocational schools/colleges.

‘Highly-skilled Workers’ versus ‘Technicians’ in the Training Target for Vocational Colleges

In a series of surveys, worries were repeatedly heard that vocational college graduates are not so competitive as most of people thought. Many teachers definitely assert that their students have to compete with high school leavers for the same positions. It sounds obscure but is occasionally a fact. The irritating situation is partly due to the blur of teaching targets.

Traditionally, vocational colleges used to foster technicians with secondary vocational schools fostering skilled workers (Xu, 2009). Years ago, when TVET were experiencing unprecedented employment stresses, the national educational authorities announced an official teaching target for vocational colleges – ‘to foster highly-skilled workers’. But no explanation was given about what skill was high or what was low. In China’s political context, educational authorities have incomparable influence over individual schools/colleges, which were quick to make a series of adjustments. More manual trainings were added to the curricula and lower standards of academic learning were adopted. Consequently, the official teaching target is partly achieved: workers are trained but high skills are missing.

Whether vocational colleges should target at highly skilled workers or technicians may not be the center of the issue. What really matters is a clear definition of the teaching targets. Policy makers must learn to avoid vagueness.

Conclusions

From the brief analysis of the present issues and challenges of TVET in China, we may come to the following simple but important conclusions:

1. With the demographic change and further industrialization, a crucial point is ahead of TVET system, where more individual-oriented education is needed. Policy makers and educators of TVET must get well prepared for the alternation.
2. An independent TVET system is no longer appropriate for the rapid development of China society; a close partnership with other social sectors is essential and urgent.
3. The reform of the TVET system in front of us must be a comprehensive one rather than one-side solutions.

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Challenges of Vocational Education and Career Education in High Schools in Japan – From the Viewpoint of Career-competency Formation for Transition

Moriki Terada

Characteristics and Premises of Vocational Education in Japan

Concept and Studies

The concept of vocational education in Japan had meant vocational education in high school until the middle of the 1970's and almost all studies on vocational education were targeted at the vocational education conducted at high school. As the result of the development of the special training school after the 1980's and frequent mention of the need of vocational education in the university, in recent years, the concept of vocational education has finally begun to be used even in stages of higher education.

Conversely, the concept of vocational training rather meant Western-oriented, industrial-skill-oriented training for granting national vocational qualifications mainly under the labor administration after the law of the same name of 1958. However, this has been an extremely minor concept in the Japanese labor market, and even now, the number of new trainees with junior high-school graduates and senior high-school graduates combined is still only about 20,000.

In addition, in Japan, no dual system has been adopted, and therefore, vocational education and its studies are completely separated from in-company education training, and denote studies in vocational school or studies on special training school. Vocational education generally means 'education to develop knowledge, skill, and attitude necessary for a fixed or a specific career' (Terada, 2009).

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Target and Approach

The limit has, however, become apparent in recent years in defining the analysis concept of vocational education in such a manner. Problems of students who graduate from high school and enter employment after graduation of high school without getting prepared for a fixed or a specific career have become more acute. From the viewpoint of 'transition to working life' (employment via higher education and direct employment), further expansion of the concept (studies) of vocational education is needed. It must be taken into account that 34% of high school graduates entering employment are actually general courses graduates of high school, who account for the greatest number (Table 1), when viewed by high school courses. This would be something unthinkable in Germany and other European countries.

Furthermore, the approach becomes an issue in analyzing vocational education from the viewpoint of transition. The author believes that the world-level studies on transition have focused on 'structural approach' (organizational transition and job placement) advocated by OECD (2000, p. 21) and lacked a 'learner centered approach'. The author substitutes the concept 'structural approach' for 'career-competency formation process' composed with 'curriculum transition' (preparation in the aspect of career competency by instruction and learning processes) and 'psychological transition' (psychological preparation for career, and believes that studies on transition need investigation from educational and psychological viewpoints). Figure 1 shows the process from the viewpoints of the structural process and the competency formation process and is expressed schematically, focused on contexts, duration, process, and outcome, the four elements of transition shown in the framework of the OECD transition analysis (OECD, 2000, pp. 195–97). Consequently, in this paper, the transition system of Japanese high school students and changes of recent years will be clarified in conformity with some of these aspects, with the viewpoint of competency formation held in focus.

Conventional Japanese Transition Model

As Terada described in the 5th BIBB Congress in 2007, the Japanese society has formed the following four aspects and characteristics between school and company society after the Second World War with respect to the transition from high school to working life, when the duration of transition is assumed, say, a period from entering school to a few years after being employed or after graduation.

Table 1 Career after graduation of high schools in March, 2010 (provisional data) (Source: Monbukagaku-shô (2010a))

Career Courses	Univer- sity	Special- ized School etc.	Employ- ment	Others, jobless	Total
General					
Total number	490,161	173,096	57,433	56,045	776,735
Percentage (%)	63.1	22.3	7.5	7.2	100.0
Agricultural					
Total number	4,295	8,151	13,080	1,996	27,522
Percentage (%)	15.6	29.6	47.5	7.3	100.0
Technical					
Total number	15,867	16,698	48,154	3,710	84,429
Percentage (%)	18.8	19.8	57.0	4.4	100.0
Commercial					
Total number	20,553	20,012	26,463	4,936	71,964
Percentage (%)	28.6	27.8	36.8	6.9	100.0
Fishing, marine					
Total number	505	514	1,696	178	2,893
Percentage (%)	17.5	17.8	58.6	6.2	100.0
Home-economics					
Total number	3,695	4,343	4,943	1,323	14,304
Percentage (%)	25.8	30.4	34.6	9.2	100.0
Nursing					
Total number	3,453	508	191	121	4,273
Percentage (%)	80.8	11.9	4.5	2.8	100.0
Information tech- nology					
Total number	289	189	131	36	645
Percentage (%)	44.8	29.3	20.3	5.6	100.0
Human care					
Total number	549	805	1,448	218	3,020
Percentage (%)	18.2	26.7	47.9	7.2	100.0
Others					
Total number	22,584	6,239	1,764	2,537	33,124
Percentage (%)	68.2	18.8	5.3	7.7	100.0
Comprehensive					
Total number	18,277	14,876	12,046	4,184	49,383
Percentage (%)	37.0	30.1	24.4	8.5	100.0
Total					
Total number	580,228	245,431	167,349	75,284	1,068,292
Percentage (%)	54.3	23.0	15.7	7.0	100.0

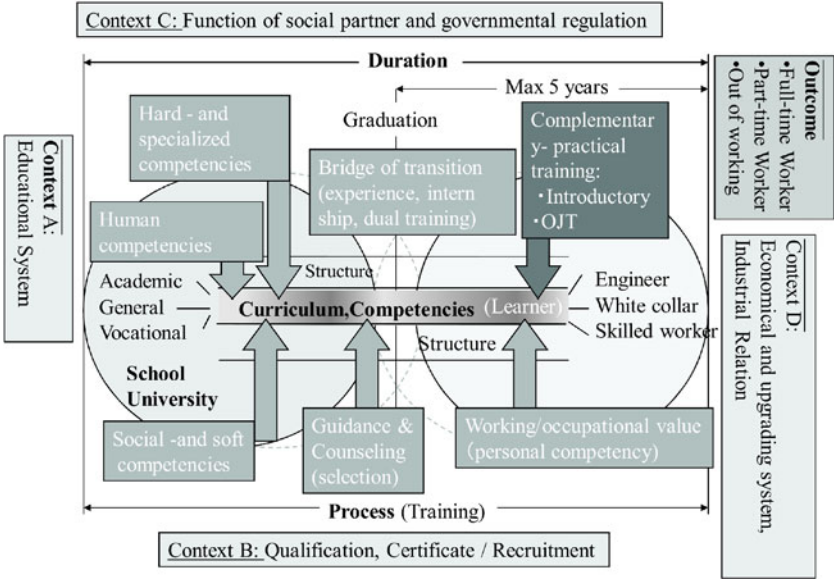


Figure 1 Concept of the Transition Process by Terada. (Source: Based on OECD (2000, pp. 195–97))

Curriculum Transition

Training object and curriculum configuration, which are core issues of vocational education and training, are referred to as ‘curriculum transition’. In Japan, the school and the company take charge of part of general education or basic and classroom-lecture oriented vocational education by industries (in Japan, generally, training of such a character is called vocational education), introductory training, and competency development of mid-career employees.

First of all, a high school that provides vocational education is one type of high school as in the case of a general high school, and the vocational education in high school is provided as professional education in a framework of a common high school. Consequently, general course subjects account for a majority of the regular curriculum. Vocational course subjects account for about 45% of the whole curriculum, at most, and to speak about the commercial courses, the subjects account for no more than 25 to 30%. Under such circumstances, the hours allotted for skill training are several hours a week, and furthermore, practical training is implemented

not in companies but in school. The author calls such Japanese vocational education 'vocational education lacking a bridge of transition' or 'autonomous vocational education by school', although Bennett described the German vocational education system in which traditional apprenticeship was preserved and complemented by part-time vocational school, such as 'The complete trade school was slow in coming' (Bennett, 1926, p. 289). In the dual system in Germany, the school and the company share and organize education on theories and skills in parallel, whereas in the case of Japan, both school and company (bureaucratic model and market model) are ambiguously and serially related and connected.

Transition between Organizations

Secondly, in securing employment of high school graduates, the aspect of 'transition between organizations' which is the transfer of the labor force between the school and the company, the high school and the company have built an extremely close and solid relationship in order to make up for the lack in curriculum transition, as in the case of the 'Japanese institutional linkage model' (Kariya, 1998, pp. 332–33). Characteristics have been formed, such as (1) one-student one-company strategy (only one chance of recruitment exam), (2) job mediation by the school, (3) intramural selection to decide who would take which company's recruitment exam, (4) nationwide employment screening (recruitment) exam, and (5) as results, the long-standing performance relationship between the school and the company. In a way, these could be said to be a type of planned job allocation. Originally, in Japan, a career choice of a student rather means a company choice for a student but even so, there is not much room for company choice, either.

Career Formation after Getting Employed

Third, with respect to the initial career formation in the company after getting employed, as is commonly known, Japanese workers and officers experience diverse functions and jobs, expand and enhance their careers through the employment system by educational background, seniority criteria (long experience oriented wage and salary and career advancement), personnel replacement in the same company, and in-shop or in-office job rotation. As a result, as seen in Fig. 2 (the left figure shows the total of men and women in 1991 and the right figure men only), job retention had been much higher in international comparison. Koike and Inoki (2002, p. 266) who conducted questionnaire surveys on the career formation process of

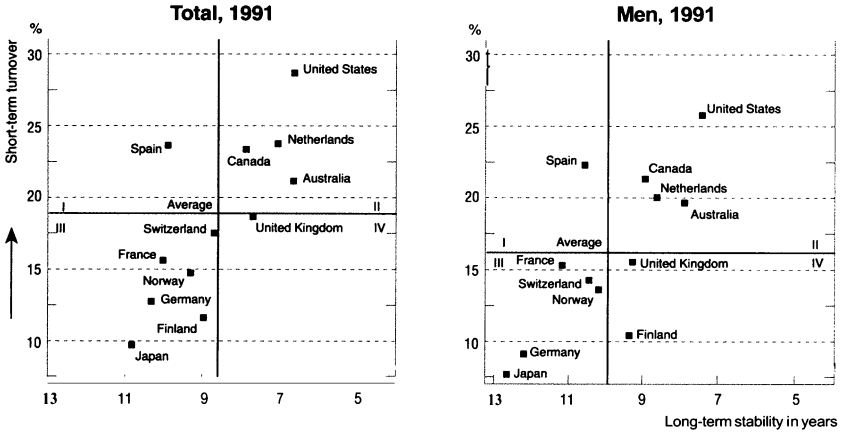


Figure 2 Short-term turnover¹ and long-term stability²

1. Short-term turnover is approximated by the proportion of workers with tenure less than one year.
2. Long term stability is approximated by average tenure. (Source: OECD (1993, p. 133))

the white-collared in the three countries of Japan, the United States and Germany, demonstrated that Germany was characterized by movement in the same function in the same company and the United States by movement in the same function among multiple companies, whereas Japan was characterized by move in one company among multiple functions.

It is the standard description on the Japanese career model in that in Japan, in parallel with labor move within the company, the company provides well-thought-out employee training within the company, such as Off-the-Job-Training as well as On-the-Job-Training by hierarchies and functions and furthermore, support to self-cultivation, etc. (Koike, 1997). There are, however, many criticisms in that these are models for male executives of large companies and are stereotypes that lack verifiability (Nomura, 2001), but it cannot be denied that this is an internationally distinctive practice. At any rate, the Japanese society allows vertical moves, in which many students who graduated from vocational high school before the 1960's are able to move up the company ladder up to a company's officers and factory general managers.

Psychological Transition

Finally, vocational awareness and career choice, the psychological transition of high school students and university students before job placement that reflects the working life of adult employees as described above, also reflects the close recruitment and job mediation relationship between the school and the company. The students become organization-oriented and show great loyalty as adult workers and employees. It is therefore somewhat appropriate to say that Japanese students are not job-oriented like in Germany (Georg, 1995, p. 53, 1993).

To quote the words of Schein, a career psychologist in the United States, Japanese young people and employees are not 'technical and functional-oriented' (Schein, 1978, pp. 128–29), a major career anchor for Americans, but traditionally aspire to stability and service more strongly (Odaka, 1970, pp. 239–49).

Fluctuation of the Japanese Mechanism

The foregoing were characteristics up until the economic bubble in the early 1990's up until the start of the new millennium. In the corporate society, in 1995, Japanese Economic Federation made a proposal of a plural career system, that is, three employment types comprising 'Long-term storage capacity utilization type' (traditional employment by lifelong employment), 'Advanced professional development utilization type' (fixed-term employment by the annual salary system), as well as 'Employment flexibility type' (short-term employment by hourly wage) (Nihon Keisha Dantai Renmei, 1995, p. 32). In addition, in the educational and training field, in 2004, a policy referred to as 'Young people self-support and challenge plan' was implemented. Since then, the Japanese transition mechanism has undergone a considerable change. Now, main trends are summarized hereunder in conformity with the relevant transition aspects.

Habitualness of Jobless Status of Graduates and Narrowed High School Graduates Job Market

Concerning the most characteristic change for high school graduates getting employed, the inter-organizational transition, the habitual nature of the jobless status of graduates can be mentioned. As shown in Table 1, the ratio of jobless graduates was as low as approximately 7% but after the 1990's, about 10% of high school grad-

uates consistently remain in the condition of being not in post-secondary education and of being unable to become employed. In the case of university graduates, the ratio of jobless people is approximately 20%. In high schools, students who originally hope to become employed change their course line after graduation from joining a company to entering into special training school or private college and university when it seems difficult to become employed.

Furthermore, after 1998, a large change occurred in the recruiting structure for new graduates' employment; that is, conversion from high-school graduates to college or university graduates occurred (Terada, 2009, p. 122). While the new graduates' job market in general is shrinking, job offers to high school graduates have been excessively decreased. Right after the collapse of 'bubble economy' early in 1990 which was characterized by excessive speculation to real estate and shares, the number of recruits being sought was 1,670,000 and the opening-to-application ratio was 3.34 as of March 1992, but in March 2010 (they decreased to only 199,000 and 1.32) respectively (Monbukagaku-shô, 2010a).

The opening-to-application ratio as of July when high school students begin preparation for getting employed and companies begin their recruitment was 2.23 in Tokyo, 1.40 in Osaka and 1.21 in Aichi (Nagoya, etc.), but in the case of non-industrial prefectures such as those in Kyushu and Okinawa districts (eight prefectures) of the southwest part of Japan and those in Tohoku and Hokkaido districts (seven prefectures) of the northern part of Japan, this ratio was as low as around 0.2 only. Under these situations, as observed in the final report of 'studies on transition of high school graduates to working life' created jointly by Ministry of Education, Culture, Sports, Science and Technology and Ministry of Health, Labour, and Welfare (Monbukagaku-shô and Kôseirôdô-shô, 2002, pp. 10–14), the one-student one-company principle must be virtually modified under the continuing weakness of the number of recruits being sought and opening-to-application ratio, and the traditional performance relationship between the school and the company (relation of sending away and receiving of high school graduates) has no other choice but to be reduced.

Early Turnover, Career Change and Work Place Change

The common practice of lifelong employment, linked to the recruitment of new graduates, which is a characteristic of Japanese transition, has begun to fluctuate. In particular, early turnover of young people has become noticeable. An increase of persons who graduated, got employed, and left a job within 3 years is called a '7.5.3 phenomenon'. This tendency has not receded since the 1980's. The early turnover of

Table 2 Total percentage of job stopping within three years after employment for high school graduates (Source: Mie-ken Shoko Kaigisho (2008, p. 7))

	Number of employed graduates in 275 companies in April, 2005		
	General	Vocational	Comprehensive
	360	514	45
Job stopper within one year			
Total number	99	78	9
Percentage (%)	27.5	15.2	20.0
Job stopper within two years			
Total number	50	46	5
Percentage (%)	41.4	24.1	31.1
Job stopper within three years			
Total number	18	24	2
Percentage (%)	46.4	28.8	35.6

college and university graduates is approaching 40% in recent years, and the author calls this a '7.5.4 phenomenon'.

The problem is the breakdown of 50% high school graduates. Needless to say, the figures indicate the national average. In some prefectures, much higher figures are obtained, and in other prefectures the figure is lower, as observed with an example of Mie Prefecture (the prefecture on the west side of Nagoya City, Aichi Prefecture with Nagoya City as its prefectural capital). Though it is such an important problem, no fixed demonstration data is available for this. Under such situations, a complete enumeration (Table 2) of employer companies for high school graduate job finders conducted by Mie Prefecture in 2008 expresses an extremely interesting fact (Mie-ken Shoko Kaigisho, 2008, p. 7).

It would be understandable that general course graduates leave a job and change a job and end as job-hopping part-timers and NEETs (not in employment, in education or training), but this course is not an exception for the vocational course graduates, either. In the case of Mie Prefecture, the ratio of general course graduates who left a job was 46.4% but the ratio reaches 28.8% even for vocational course graduates. In Japan, in 1994, a comprehensive course and a comprehensive high school were introduced in order for students to comprehensively take general education and vocational education. Mie Prefecture adopted the comprehensive course in the first year of introduction. In Mie Prefecture, the turnover within three years

of comprehensive high school graduate job finders of eight such schools (332 such schools throughout Japan) is 35.6%, which is nearly intermediate between the ordinary course and the vocational course.

Though it is not presented in this table but particularly serious is the commercial course. The commercial course graduates who desire to get employed are in the position most strongly exposed to the pressure applied by the graduates from human or social science colleges in clerical positions and sales positions. In addition, inside the same high school graduates, commercial course graduate job seekers overlap general course graduate job seekers in the job market. Furthermore, the percentage of commercial high school graduates who pursue higher education is as high as 56.4%, and the *raison d'être* of a commercial course high school as a vocational education institution is called into question.

Individual-centered Vocational View

Under these circumstances, the motive and the sense of value of high school students for their jobs are undergoing a considerable change. First of all, this is common to young people in Japan today, but for high school students in general, working life is given extremely little weight in their life (Fig. 3). When the author thinks of company belonging (contribution) inclination of 'my spirit is always with my company; I will continue to work in my company', or the *moretsu shain* (ambitious employee) inclination of 'want to be promoted to higher position' lauded during the high-growth period, the author feels he is living in a quite different age.

Furthermore, the author has been making investigations on a psychological preparation state and a vocational view to working life from the viewpoint of international comparison for several years in order to find out the internal structure of vocational consciousness and vocational view. In 2008, the author preliminarily had a questionnaire on a total of 1,402 high school students (12th graders) of Japan, China, Korea and Indonesia. Furthermore, in 2009, in order to compare developed countries, the author made investigations on 10th graders this time in 17 high schools (about half each for general and vocational high schools) for a total of six countries with high schools in Germany and the United States added. The results indicated were still more shocking.

Response results on questions of 28 items concerning the vocational view only are introduced. The results underwent factor analysis by promax rotation on the basis of the principal factor method, and multi dimensional scaling by five extracted factors was performed. In this paper, the vocational consciousness of high school students of each country were compared with respect to the two vocational views'

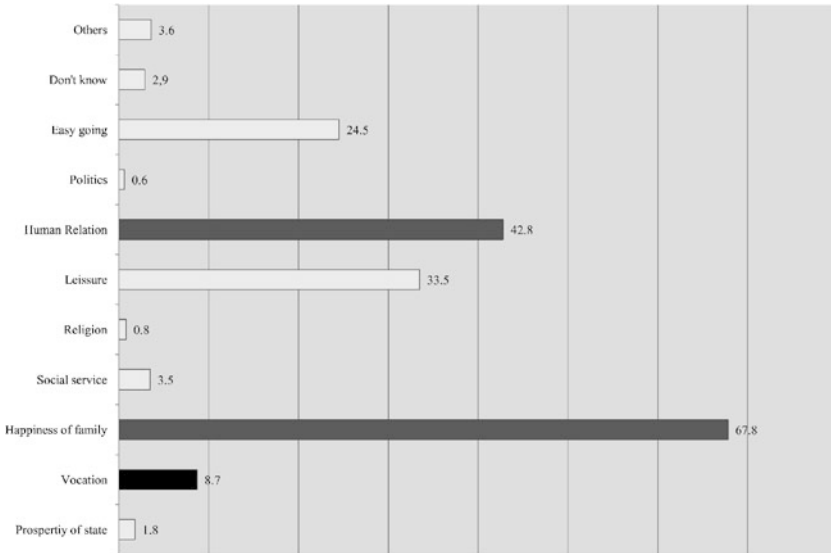


Figure 3 Most important matters for your life (select max two items) (%) (Source: Terada (2011, p. 7))

scales only. It is regrettable to say that Japanese high school students had low point scores in all scales and in Germany too, students had equally low point scores. On the other hand, American students were different (Terada, 2011, p. 7). It would not be correct to say that as the economy develops and an affluent society arrives, a human becomes lowly-motivated.

Furthermore, when the results are viewed by courses, in general, the job consciousness of students of the general course tends to be weak. This result casts a serious tone over the transition issue of high school students.

Introduction of Career Education and Reform of Vocational Education

Needless to say, the Japanese Government, teachers and researchers never think that all the above tendencies are favorable. In order to solve these problems, several reform measures have been taken and are still underway from the aspect of high school curriculum in order to allow the transition to working life to take place

smoothly. One is the concept of consistent career education common to general and vocational courses from the elementary school to the university, which were planned and put into practice in the United States in the beginning of the 1970's and were introduced to Japan simultaneously. By the report of Central Council for Education of 1999, the concept of career education was introduced as part of connections between secondary education and higher education. The other was reform and improvement of vocational education.

Implementation of Career Education in the General Course

As of 2009, of a total of 5,183 high schools, 3,978 high schools (77%) have the general course, of which 2,699 are public high schools having a general course installed (52%) (Monbukagakaku-shô, 2010a). Since the proposal made in 1999, as a core approach of career education, an internship for several days (close to *Schnupperpraktikum* in Germany) was concurrently introduced in junior and senior high schools as well as universities. With respect to public senior high schools, the internship has been put into practice in 80 to 93% vocational courses and in about 60% general courses. However, the number of students of a general course who have experienced the internship are merely 83,653 (17.3%), and the total days on internship are not approximately two weeks (as in Germany) but about five days, and this situation is same in about 90% of the high schools (Kokuritsu Kyoiku Seisaku Kenkyusho, 2010).

Implementation Status of Vocational Education in the General Course

On the other hand, in order to improve the non-vocational preparation condition of students on the general course, which has been increasing since the 1970's, efforts have been made to organize vocational education in the general course. On the authority of the school headmaster, elective subjects and vocational subjects prescribed in the Education Ministry curriculum guidelines are able to be offered to students. According to the investigation of Ministry of Education, Culture, Sports, Science and Technology in 2009, with respect to public general courses, in 67% high schools, agriculture, industry, commerce, home-economics, and other vocational subjects are established as elective courses (several subjects per school). In most cases, they are, however, commerce (51%) and home-economics (81%) based subjects and up to 35 students choose each subject per school (Monbukagakaku-shô, 2010b, p. 146).

Curriculum Reform in Vocational High Schools

After 2003, together with Ministry of Health, Labour and Welfare, Ministry of Education, Culture, Sports, Science and Technology introduced the 'Japanese-version dual system' in order to make up for the historical defects of Japanese vocational education and technological education, so to say, the 'lack of the bridge of transition.' This apparently is based on the German model.

The Japanese-version dual system was introduced not as a result of pursuing the pedagogical principle in vocational and technological education for instructing theories and skill practices in parallel and nurturing well-balanced vocational capabilities but rather was introduced as part of corrective measures against high-school graduate NEETs or high-school graduate job-hoppers. In the realm of Ministry of Education, Culture, Sports, Science and Technology, a practicum in company (Japanese-version dual system) is organized mainly between vocational high schools and local companies in about 20 prefectures throughout Japan, but this has not yet reached the reform of the main body (reform of general courses) of vocational education in high schools or vocational training of labor administration.

Challenges and Summary

This chapter discussed the mechanisms involved in transition and vocational education and its fluctuation, policy measures and other influences. Lastly, the author would like to show some of the challenges to conclude this paper, with respect to discussions concerning career education (education for nurturing necessary abilities and attitudes for social and vocational independence) as well as vocational education in the 'special sectional meeting for career education and vocational education' of Central Education Council after December 2008, to which the author participated as a member (Monbukagaku-shô, 2010b).

Radical Reforms of the High School System

The first challenge that can be pointed to is the introduction of vocational education in the general course. In Japan, however, where the National Entrance Screening Test system is extremely solid, this is a difficult assignment. It has been 16 years since a comprehensive high school (comprehensive course) was born in 1994. Compared to general high schools and vocational high schools, comprehensive high schools account for only about 5% in terms of the number of schools and the number of

students. We should have a view of not having vocational education in the general course but rather having a system that enables all high school students to select vocational subjects, that is, literally changing over the concept to that of the comprehensive system which the upper secondary school right after the Second World War hammered out.

Establishment of the Vocational Education System

As viewed in the fact that no independent law of vocational education exists under the Administration of Education, there is no consistent system of vocational education from secondary education to higher education. In addition, the Administration of Education and the Administration Labor exist separately and concurrently with no special interchangeability (for example having none commonality of acquirable academic degrees and vocational qualifications).

Under such situations, it is noteworthy that in the above-mentioned Central Education Council, institutionalization of a 'new higher vocational education' is put in perspective, which is not special training school or junior college, which is minor and has only two-year courses, or not a technical school which has no clear positioning from the viewpoint of School Education Act, but has courses of not less than three years and is also positioned as higher education. It is assumed that special training schools would serve as the parent of such a new higher vocational education system.

The 'University' as the School Education Act prescribes, 'purports to extensively impart knowledge and thoroughly instructs and studies professional art and science ... as a center of sciences' (MEXT, School Education Law, Article 83). In the university, with the exception of nurse education, if we think that organization of practical or vocational qualification-oriented vocational education is nearly impossible, and under the conditions that the percentage of students pursuing higher education has already reached about 53%, institutionalization of a vocational university type institute similar to that of Germany, which has the market value equivalent to the university, would be required.

Investigation on Japanese-version NQF

In achieving systematization of vocational education, in particular, in Japan, the market value and evaluation of vocational education at the high school or higher educational facilities in the company and the society becomes a subject of discus-

sion. In Japan and East Asian countries where the Western-style cross-sectional external labor market or institutionalization of skilled worker qualification is immature, relevant reinforcement of the labor market and employment from the side of the school system should be started rather by the former through positively approaching the latter. In Japan, too, it becomes an action assignment to establish a competence assessment and qualification system of vocational education completion as well as to institute a system for guaranteeing that one student is on the secondary education level, and the other student is on the higher education level. Several government ministries including Ministry of Education, Culture, Sports, Science and Technology, Ministry of Health, Labour and Welfare, Ministry of Economy, Trade and Industry, etc. are about to begin investigating the formulation of Japanese-version NQF (National Qualification Framework). Under the circumstances in which the labor movement from Asian countries, including China, has considerably developed, the system shall have a view of the Asian-version qualification framework (AQF) that exceeds the national framework called the Japanese JQF.

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Japan's Public Youth Training Programs, Enterprise-sponsored Training and the Society of Control

Toshiko Ito

Introduction: Vocational training for Today's Youth

In April 2010, the Diet of Japan enacted the 'Law to Promote the Support of Foster Children and Youth' (*kodomo wakamono ikusei shien suishin hō*), which states that 'children and youth should grow up healthy, be well aware of their position in the society, and establish independent individualities so that they can jointly overcome the challenges of the next generation' (Cabinet, 2010a, p. 2). To promote these aims, the law invokes a societal ideal: 'all members of all social institutions – such as families, schools, workplaces, local communities – play their roles supporting children and youth in a *cooperative* and *integrated* fashion' (*ibid.*, p. 3; emphasis T.I.). This statement implies that the institutions that make up society were divided along jurisdictional lines, and are now to be comprehensively integrated. The newly enacted law underlies the 'Guidelines for Children and Youth' (*kodomo wakamono bijyon*), which, made available in July 2010, greatly emphasizes cooperative and integrated support that focuses on the employability of the future workforce (Cabinet, 2010b).

According to Michel Foucault, 'in the course of the seventeenth and eighteenth centuries the disciplines became general formulas of domination' (Foucault, 1977, p. 137). Disciplines form '*enclosure*, the specification of a place heterogeneous to all others and closed in upon itself' (*ibid.* p. 141; emphasis M.F.), which Foucault describes as 'the protected place of disciplinary monotony' (*ibid.*). Individuals used to transfer from one enclosed place to another, each of which was governed by its own unique set of disciplines: individuals generally passed from family to school, from school to military barracks, from military barracks to factory, occasionally to hospital, or even to prison. In Gilles Deleuze's analysis, the epoch of 'disciplinary societies'

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is now over, as we've entered 'societies of control' (Deleuze, 1992, p. 4), in which individuals – now 'dividuals' (ibid., p. 5) – have no definite enclosed space, consequently make no discrete transitions from one enclosed space to another: there is only a 'continuous network' (ibid., p. 6).¹ The unenclosed space – society – is now governed on the basis of data by free-floating control rather than by disciplines. Deleuze specifically points out a new phenomenon that illustrates the disappearance of the dividing line between school and workplace: 'many young people strangely boast of being 'motivated', they re-request apprenticeships and permanent training. It's up to them to discover what they're being made to serve, just as their elders discovered, not without difficulty, the *telos* of the disciplines' (ibid.).

In the epoch of disciplinary societies, in which the allocation of roles between school and workplace was clearly divided, Japan functioned in an exemplary way. Smooth transition from school to workplace used to be an internationally acclaimed characteristic of Japan's educational system (Dore and Sako, 1998, p. 168). In Japan, where school is devoted solely to general education, and vocational training starts only at the workplace, the ability of the young to find permanent and mostly regular employment has been attributed to the close relations between schools and enterprises rather than an apprenticeship as a bridging period (Kariya, 1999, p. 282).² Today, however, Japan is transforming into a society of control.

Since the beginning of the 1990's, the transition from school to workplace has become much harder, and the number of involuntary non-regular employees has increased dramatically, especially among young people, a trend which is exacerbated by the desire of the enterprises to 'save labor expenses' (JILPT, 2009, p. 79). As a consequence, non-regular employment is considered normal today. There is a diversity of non-regular employees, such as part-time workers, dispatched workers and contract workers. Young temporary employees or part-timers are called 'free *arbeiter*', or 'freeter' for short.³ Increasingly, young people complain about

¹ This change causes a series of new phenomena: 'just as the corporation replaces the factory, perpetual training tends to replace the school' (Deleuze, 1992, p. 5).

² Japan has been termed 'youth friendly' (OECD, 2000, p. 46) due to this smooth transition. Conventionally, this smooth transition has been ascribed to the exceptionally close relations between schools and enterprises. Recent research has challenged this view, however, pointing out that such close relations are not unique to Japan and that they only partially account for the phenomenon they appear to explain (Kosugi, 2010a, pp. 2 et seq.).

³ There has always been a large number of part-time working students and housewives. But it is a novel phenomenon for many young people to enter part-time employment as their main occupation after leaving school. Such 'freeters', according to the official definition, are 15–34 year olds that neither attend school nor help with housework, but either work as employees called *arbeit* (part-timer) or seek a job as *arbeit*. Women must also be unmarried to fit the definition.

'lack of opportunities for regular employment' (ibid.), and those who are employed as non-regular workers miss the opportunity to accumulate job skills through in-house training that enterprises generally offer to their regular employees. As their resilience declines with increasing age, access to regular employment becomes ever more remote.

Enterprises attempt to reduce personnel costs not only by increasing the share of non-regular employees, but also by asking regular employees to assume responsibility for their training themselves. Among Japanese enterprises, there is a marked decline in the conventional practice of recruiting large numbers of new graduates as regular employees and providing them with intensive in-house training (ibid., p. 147). As a consequence of this decline, regular employees as well as non-regular employees are increasingly expected to undergo training without relying on enterprises to provide it.

Under these circumstances, public vocational training is coming to play an ever more important role, and the demand for public vocational training is rising rapidly. In 2008, there were only 130,000 trainees, while their number rose to 450,000 in 2009. The government anticipated in 2009 that the number of trainees would reach a million in the coming three years (Asahi Newspaper, 2009). Yet the rise of public vocational training does not necessarily alleviate the employment crisis: having undergone training, an increasing number of people still remain without a job, as the training provided does not sufficiently reflect the demand of the enterprises.

Framework of Public Vocational Training

From the beginning of the modern period until the 1950's, the Japanese government played the dominant role in the provision of vocational training, for example in introducing foreign educational systems. In the 1960's, government began to regard enterprise-level human resources development as central; scaling back its involvement, it came to limit its role to the facilitation and supplementation of such programs. As a consequence, human resource development came to depend on enterprise-sponsored training as part of a culture that favored lifetime employment and the seniority system. The *Human Resources Development Promotion Act*

In addition to such young non-regular workers, there is an increasing number of jobless young people who are not looking for a job (in many cases after a long, unsuccessful job search). They are called NEET and are distinguished from the unemployed, who are seeking a job. NEET are aged between 15 and 34, are not in the work force, and are neither enrolled in schools nor engaged in housework. More about freeters and NEETs: see Ito 2007, especially chapter III.3.

(*shokugyō nōryoku kaihatsu sokushin hō*; formerly *shokugyō kunren hō*) of 1985 reflects this attitude toward vocational training. The Act promotes enterprise-oriented vocational training by authorizing on-the-job training and introducing flexible criteria for training to reflect the varying needs of individual enterprises.⁴

On the basis of this piece of legislation, the *Basic Plan for Human Resources Development* (*shokugyō nōryoku kaihatsu kihon keikaku*) is drawn up every five years. The sixth iteration of the 'Basic Plan', which covers the period between 1996 and 2000, marked a turning point away from the traditional system as it highlights increasing labor mobility and introduced the principle of personal responsibility for job skills development. Within this framework, the 'Training and Education Benefits System' (*kyōiku kunren kyūfu seido*) was introduced in 1998 and established the principle that workers can receive stipends for training on their own initiative. The seventh iteration of the 'Basic Plan' for the period between 2001 and 2005 acknowledged that innovation in technology and economic globalization cause increasing mismatches between prospective employees' skills and the labor market's demands, and consequently emphasizes the importance of access to relevant information on the labor market as well as the importance of access to vocational training for workers' career development (JILPT, 2009, p. 136). The eighth iteration of the plan for the period between 2006 and 2010 stresses the importance of public programs⁵ as the foundation of job skills development so that workers can take personal responsibility for their vocational development (ibid., p. 149).

Today, government operates under a quite expansive definition of the term 'public vocational training' which no longer refers merely to the provision of vocational training at public human resources development facilities. Public vocational training now also includes the payment of subsidies to defray educational expenses, based on three policies:

1. Providing vocational training at public human resources development facilities (the narrow definition of public vocational training).
2. Encouraging employers and employer associations in the private sector to offer vocational training by awarding subsidies, disseminating information, and providing consulting services.

⁴ In addition to the conventional type of training programs, in which 190 vocational categories are recognized, a new type of training program has been introduced that doesn't prescribe any categories (Tanaka, 1996).

⁵ The document mentions the development of a 'Japanese Dual System' (*nihon-ban dyuaru-shisutemu*) for freeters and 'Independence Camps for Youth' (*wakamono jiritsu juku*) for NEET (MHLW, 2006).

3. Motivating workers to acquire skills voluntarily by granting subsidies and providing informational and consulting services (JILPT, 2006, p. 112).

Because of this expansive definition, and because responsibility for vocational training had lain with the enterprises for decades,⁶ public vocational training schemes, especially those for young people, remain insufficiently developed.

Detailed policy guidelines relating to the 'Basic Plan' are developed by an adjunct agency of the Ministry of Health, Labor and Welfare (MHLW), the Employment and Human Resources Development Organization (EHDO; *koyō nōryoku kaihatsu kikō*). EHDO also supervises the implementation of these guidelines and aims to strengthen the public vocational training system as one of its main commitments. The public vocational training of graduates from school, unemployed workers and employed workers is then conducted at public human resources development facilities,⁷ of which there are 73 national institutions under the supervision of EHDO and 178 prefectural institutions (Terada, 2009, p. 169).⁸

⁶ 'There was virtually no organization to help young people that belonged to neither school nor workplace with opportunities for education, training, counseling, or job hunting' (Miyamoto, 2005, p. 77).

Public expenditure on vocational training programs as percentage of GDP was 0.14% in Japan in 2008, while in Germany it was 0.29% (OECD, 2010a, pp. 299 et seqq.). According to a recent OECD report, Japan's public expenditure on education as a percentage of total public expenditure was the lowest-but-one of the 33 OECD countries: Japan spent only 9.4% in 2007, as compared to an average of 13.3%. More public expenditure on education is desirable, because, according to the OECD analysis, employment rates strongly correlate with educational attainment (OECD, 2010, p. 100).

⁷ EHDO's remit includes three areas:

1. Providing vocational training at public human resources development facilities;
2. Encouraging employers and employer associations in the private sector to offer vocational training by awarding subsidies, disseminating information and providing consulting services;
3. Motivating workers to acquire skills voluntarily by granting stipends and providing informational and consulting services (JILPT, 2006, p. 112).

⁸ EHDO offers vocational training to three groups:

1. The unemployed are eligible for training courses (e.g. courses for technical operation like mechanical design and process, control technology, building maintenance, services, housing service), which last three to six months. In 2009, there were 29,405 trainees at facilities supervised by EHDO and 43,424 trainees at providers under contract with EHDO, then additional 22,924 trainees due to supplementary budget. The employment rate is 78.6% at EHDO-providers (66.2% of those as permanent employment) and 68.1% at contracted providers (58.8% of those as permanent employment);

Public Vocational Training Programs for Young People

The 'Japanese Dual System' was introduced as the cornerstone of public vocational training. In 2003, the 'Summit on Challenges and Strategies for Youth Independence' (*wakamono jiritsu chōsen senryaku kaigi*)⁹ drew up the 'Independence and Challenge Plan for Young People' (*wakamono jiritsu chōsen puran*) which led MHLW and MEXT to introduce their separate versions of the Japanese Dual System in 2004: While the Japanese Dual System as promoted by MEXT is aimed at vocational high school students (especially students at technical high schools), the Japanese Dual System as promoted by MHLW is aimed at young people who do not go to regular schools any more.¹⁰ This new system was built on the German model, in which young people study at vocational schools and concurrently undergo training as apprentices at enterprises. The dual system in Germany aims to render trainees employable in accordance with nationally prescribed standards. The dual system in Japan originally aimed to do the same and was implemented after persistent lobbying by the Japan Business Federation (*nippon keidanren*), an organization that had been championing the concept of 'employability' since at least 1999, as the 'ability to be employed within and outside of companies and ability to facilitate labor mobility' (JILPT, 2009, p. 138).

Under the slogan 'Learning while you work', EHDO recognizes three types of training providers:

1. Polytechnic universities governed by EHDO offer a 'Special Course' (*senmon-katei katsuyō-gata*), which lasts two years and includes on-the-job training at enterprises. Trainees are high-school graduates under 40 years of age.
2. Polytechnic centers governed by EHDO offer a 'Short-Term Course' (*tanki-katei katsuyō-gata*), which lasts six months (maximum twelve months) and includes on-the-job training at enterprises. Trainees are mostly freeters.

2. Employees are eligible for training courses (e.g. qualification courses for mechanical design, CAD/CAM and factory automation), which last two or three days. In 2009, there were 42,367 trainees;

3. Training courses (e.g. electrical technology, information technology and machining) for new graduates last one or two years. In 2009, there were 81 trainees. The employment rate was 89.7% (MLHW, 2010).

⁹ The summit included four Cabinet ministries: the Cabinet Office, the MHLW, the Ministry of Economy, Trade and Industry (METI), and the Ministry of Education, Culture, Sports, Science and Technology (MEXT).

¹⁰ For a more detailed account of the contrast between the Japanese Dual System introduced by MEXT and the one introduced by MHLW, see Ito 2010.

Table 1 Contract Course (Source: EHDO (2010))

Year	2004	2005	2006	2007	2008	2009
Number of Programs	1,620	1,526	1,649	1,534	1,891	2,025
Number of Trainees	32,905	24,681	25,538	24,912	30,426	34,217
Percentage of Employment	68.6	72.3	75.3	77.1	74.4	70.6

3. Private providers under contract with EHDO offer a ‘Contract Course’ (*itaku-kunren katsuyō-gata*), which lasts four months (maximum six months) and includes on-the-job training at enterprises. Trainees are mostly freeters (MHLW, 2010).

Two of those course types, namely ‘Short-Term Course’ and ‘Contract Course’, are intended for young non-regular workers, who have virtually no access to vocational training.

The ‘Contract Course’ was introduced in 2004. Its contents differ from one institution to another, but in general, trainees obtain knowledge and skills in a certain area (e.g. data processing) at the contract institute for the first three months of a four-month course, which is a part of their preparation for a vocational qualification. After obtaining the qualification, trainees spend the fourth and last month undergoing on-the-job training at enterprises (Nagata, 2007). The number of ‘Contract Course’ trainees has increased, and most participants find jobs after completing the course (see Table 1).

The ‘Short-Term Course’ was introduced in 2007 and follows a set pattern as well. In the first four months, trainees obtain knowledge and skills in a certain area (e.g. mechanical engineering, electrical engineering) at polytechnic centers. In parallel with this educational training, trainees choose enterprises where they would like to have on-the-job training during the course and get employed afterwards. They undergo training at their chosen enterprises for a month: in the second half of the fifth month and in the first half of the sixth month. In the second half of the sixth month, they study at polytechnic centers to attain knowledge and skills they did not manage to acquire while training at the enterprise (Matsumoto, 2010). The number of ‘Short-Term Course’ trainees has increased, and in comparison with the trainees of ‘Contract Courses’, a higher percentage found jobs after completing the course (see Table 2).

Table 2 Short-Term Course (Source: EHDO (2010))

Year	2007	2008	2009
Number of Programs	166	203	237
Number of Trainees	1,560	2,511	3,088
Percentage of Employment	89.7	82.1	83.6

Ideally, enterprises and educational training providers (polytechnic centers and private providers) would design a program jointly, making sure that the contents of educational training and the contents of on-the-job training are integrated into a coherent, unified package, thus maximizing the employability of their trainees. In reality, the Japanese Dual System falls short of this ideal. Providers of educational training (polytechnic centers and private providers) generally struggle to find a sufficient number of enterprises to take on trainees. As a consequence, they have to indulge enterprises with respect to the contents of on-the-job training. Educational training providers attempt to recruit enterprises by stressing the incentive that enterprises may expect to retain a trainee as a permanent worker after the course. This expectation means that trainees are advised to choose an enterprise for their training with a view to permanent employment after the course (Nagata, 2007, p. 166). While quantitative rules – e.g. the ratio of on-the-job training to educational training – are strictly adhered to, the qualitative aspects – e.g. integration between educational training and on-the-job training – tend to be disregarded. Individual enterprises determine the contents of their on-the-job training, often tailoring them only to their own specific needs, without imparting the general knowledge and skills required outside their respective enterprise. The contents and quality of on-the-job training offered by the enterprises are considered to be of minor importance: providers leave the contents of on-the-job training up to enterprises, which are free to develop the job skills for which they happen to have the greatest need (*ibid.*, p. 168). Thus, medium-sized and small enterprises will take on trainees as workers in the busiest season to make up for labor shortfalls.

This system, then, although often touted for its efficiency, amounts to little more than a subsidized trial period¹¹ camouflaged as practical training.¹² Meanwhile, the

¹¹ Enterprises are entitled to a monthly subsidy of ¥24,000 (about €210) for every trainee.

¹² Instructors of a polytechnic center have expressed their belief that the dual system provides enterprises with an opportunity to examine trainees' aptitude for a job, while providing trainees with an opportunity to show their determination and attitude toward the job (Matsumoto, 2010, p. 7).

Japanese Dual System has begun to resemble a job bank that lets trainees be hired at the enterprises where they have on-the-job training, with little consideration given to developing their employability.

The alleged efficiency of the dual system is coming under increased critical scrutiny, as it becomes clear that the original purpose of the Japanese Dual System is not being served very well (*ibid.*). Eiichi Sasaki, for instance, criticizes that the Japanese Dual System was launched without publicly set standard curricula (Sasaki, 2005, p. 10), as the skills acquired in training should not be limited to meet the particular interest of enterprises offering the training, but be broad enough to meet the general interest in having validity outside the specific enterprises. The original purpose of the dual system appears to be honored in the strict discipline with which enterprises maintain evaluation sheets of their trainees and thereby purport to document the progress made in their employability. But in actual fact, the system is geared to serve the private interests of individual enterprises and contributes next to nothing towards the publicly funded goal of raising the trainees' employability.

Four years after the introduction of the Japanese Dual System, a job card system was introduced which partly overlaps with the dual system. Launched in April 2008, the 'Japanese Job Card System' (*jobu kado seido*) is modeled after the National Vocational Qualifications (NVQ) scheme in Great Britain (Cabinet, 2007, p. 13) and seeks to increase the employability especially of freeters, working mothers and single mothers.

Under this scheme, job seekers can fill out job cards with information about their education and training backgrounds, qualifications, and employment history, and receive career-counseling at public job centers, which will issue and verify the job cards. Depending on the advice of counselors, some go job hunting with their job card right away, others enter programs designed to develop their vocational abilities. People entering such programs can earn certificates of vocational abilities (so-called Vocational Ability Evaluation Sheets) and return to the career-counselor to have their certificate added to the job card and receive new advice.

MHLW offers programs to develop vocational abilities¹³ in two categories: 'Entrusted Training' (*itakugata kunren*) and 'Contracted Training' (*koyōgata kunren*). 'Entrusted Training' and a part of the Japanese Dual System have been merged: the existing 'Contract Course' was integrated into the Job Card System upon its inception in 2008. In 2009, the more recent 'Short-Term Course' followed the precedent and was integrated into the Job Card System as well. 'Contracted Training', where

¹³ MEXT offers 'Practical Programs for Education' (*jissengata kyōiku puroguramu*), so that people can learn to improve their vocational abilities, and get certificates upon completion of a program.

Table 3 Job Card System (Source: Cabinet (2011))

Year	2008	2009
Number of Issued Cards	64,865	159,268
Number of Authorized Enterprises	(A) 582 (B) 506	(A) 3,979 (B) 1,557
Number of Enterprises Which Undertook Trainees	(A) 237 (B) 164	(A) 2,397 (B) 424
Number of Trainees	(A) 505 (B) 957	(A) 4,338 (B) 3,133

(A) Fixed-Term Practical Training

(B) Practical Human Resources Development System

people undergo training with a contract of employment, consists of two types: one is 'Fixed-Term Practical Training' (*yūki-jisshūgata kunren*) and lasts between three and six months, aiming to secure regular employment; the other is 'Practical Human Resources Development System' (*jissengata jinzaiyōsei shisutemu*) which lasts between six months and two years, training prospective middle management. Enterprises receive a subsidy of ¥600 (about €5) per hour for every trainee they accept. Job cards are intended to enable job seekers to analyze their vocational abilities objectively and to communicate these abilities to enterprises recruiting new employees, while also enabling enterprises to employ candidates whose abilities are confirmed to match their needs. In this way, the Job Card System is assumed to reduce mismatches between job seekers and employers. The Job Card System has turned out to have a much lower adoption rate than expected. Initial projections estimated that 500,000 individuals would acquire a job card within the first three years, and a million within the first five. The number of job card holders has increased less rapidly, however (see Table 3). By December 2010, only about 330,000 individuals held a job card, and more than 100,000 amongst them pursued training, with about 70% of them going on to employment. Big enterprises are not particularly interested in joining the scheme either. While two large enterprises, Canon and Panasonic, set an example of 'Fixed-Term Practical Training' on a trial basis, enterprises participating in the scheme today are mostly small and medium-sized.

In addition to the unimpressive adoption rate, the efficiency of the Job Card System has been questioned. The government's oversight committee of current projects (*jigyō shiwake*) found the subsidies paid to the participating enterprises too high, and proposed to abolish them altogether, as well as defunding the campaign for job cards (Asahi Newspaper, 2010a).

Despite these setbacks, the immediate future of the program appears to be secured. Former Prime Minister Naoto Kan, after consultations with industry representatives, adopted the 'Basic Policy for the Employment Strategy 2011' (*koyō senryaku kihon-hōshin 2011*), a set of principles that ignore the criticism and leave the Job Card System unchanged (Asahi Newspaper, 2010b).

Conclusion: Public Vocational Training and the Society of Control

There are indications that Japan is turning into a society of control. Obscuring the dividing line between school and workplace, various government agencies cooperated on the 'Independence and Challenge Plan for Young People'. Since the introduction of the plan in 2003, the distinction between school as the discrete location of general education and the workplace as the discrete location of vocational education and training has been fading into near oblivion. The harder the government tries to establish a 'continuous network' between school and workplace, the more visible the discontinuity between enterprises becomes, even as they are called upon to provide the training at the core of the policies that are being brought in.

The Japanese Dual System and the Job Card System were both introduced to improve young people's employability quickly and efficiently, and both sets of policies require enterprises to sponsor trainees. Despite the increasing importance of securing a sufficient number of enterprises to sponsor trainees, however, enterprises are increasingly less inclined to commit themselves to the task. Various measures, such as public funding, try to entice enterprises to sponsor trainees, yet when enterprises do sponsor trainees, they invariably pursue their own specific interests in the training they provide, showing little or no interest in raising their trainees' employability, or in imparting transferable vocational skills.

The Japanese Dual System and the Job Card System are designed to help young people, especially freeters, and raise their employability rather than make them gain job skills that are compatible only with a single enterprise. But the difficulty of finding enterprises for on-the-job training has created a situation in which enterprises are allowed to provide on-the-job training with little regulation or oversight, answering few needs except their own. Although some observers still cherish the hope that the government's measures, especially subsidies and job cards, will markedly improve the employment crisis (Hori, 2010, p. 113), these measures are already known to work much less efficiently than expected.

The reason for the poor performance of the Japanese Dual System lies to a large extent in the historical and cultural background against which Japan imported its policies from the European countries whose approaches to vocational training it hoped to emulate. The dual system in Germany, although formally launched only in 1964, extends a historical tradition of labor relations that goes back to the medieval system formed by trade associations (*Innungen / Zünfte*). The Germans managed to enforce a standard of vocational training that fostered employability on the basis of trade affiliations. Japan lacks such a tradition. Britain's National Vocational Qualification, the model of the Job Card System in Japan, was introduced in 1986 and sets national standards for various well-defined occupational categories.¹⁴ Japan, by contrast, lacks any concept of well-defined occupational categories as a basis on which to define national standards for vocational training programs. Without such a standard, public vocational training will necessarily remain a losing proposition.

While government policy aims to encourage the formation of a 'continuous network' between school and workplace, the formation of a corresponding network between trainee-sponsoring enterprises makes little progress, thus undermining the emergence of a newly balanced understanding of the relationship between school and workplace. If the provision of public vocational training is any indication, Japan's transformation into a society of control will neither be smooth nor fast.

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(Vocational) Education and Social Inequality as Japanese Society Makes the Transition to a 'Global Society'

Mikiko Eswein

Introduction: the Characteristics of Japan's 'Credential Society'

Japanese society was first described as being a 'credential society' (*gakureki shakai*) in a 1970 OECD report (Yakura, 1978, p. 7). During the economic boom of the 1960's and 1970's, and until the 1990's, the Japanese system of (vocational) education had three main characteristics:

- Educational achievement determined membership of a particular social class (status determination through education).

For example, those with a degree from Tōkyō University, a state institution, could expect 'a job for life' and, on the basis of the seniority principle in pay and promotion, to be rewarded with an eventual seat on the executive board of a large, high-ranking company with accompanying good remuneration and high social prestige. When recruiting new staff, companies were concerned less about candidates' ability immediately to apply their skills and expertise and more about the status of the educational institution they had attended. They also paid little attention to making their own selection when promoting their employees. This also explains why in general terms, 'little distinction is observed [in Japan] between general and vocational skills' (Teicher and Teichler, 2000, p. 183).

- In-company initial and further training provided the socialisation function.

This emphasis in the education system on the selection function resulted in the socialisation function, including the transfer of the knowledge, skills and attitudes required for employment, shifting away from the education system and

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to the employment system. As a result, major companies had a well-developed system for initial and further training that was based particularly on on-the-job training (OJT)¹ and off-the-job training (Off JT).

- Mass educational aspiration.

Many learners sought access to specific educational institutions that promised the greatest social recognition (Teichler, 1976, p. 371 et seq.), including, for example Tōkyō University. This preference was based on the three elements making up the idealised formula for a successful life that is still widely accepted in Japanese society: ‘a good education, good employment status, and a happy life’ (Kariya, 1995, Introduction). More specifically, it reflected a marked degree of confidence that personal effort would ensure educational success. Learners had thus had high educational aspiration or a high level of motivation to study (ibid., p. 131 et seq.).

Then, however, Japan’s economic system became more and more ‘globalised’, in particular as a result of the increasing prominence of neoliberal trends and the characteristics of the ‘new economy’ but also specifically as a consequence of relatively high unemployment among university graduates. As a result, there was a decline from the late 1990’s onwards in the significance of the credential society: suddenly, after years of being able to ensure jobs for all graduates who wanted them at one specific point in the year (1 April), businesses were unable to set new graduates on the ladder to social mobility. The outcome was long-term disruption the education system’s social status determination function. The problem has been all the more acute because the company model most commonly found in Japanese business means that graduates who are unable to find a permanent appointment in a company end up being excluded from vocational education and training.

The aim of my contribution is to describe changes in the functions that Japan’s (vocational) education system fulfils against the backdrop of the country’s transition from a national society to a ‘global society’ – that is, the functions of *determining social status* (until the late 1990’s, this was referred to as the impact educational qualifications had on social status) and *socialisation* (until the late 1990’s, this was

¹ During the 1950’s, OJT was introduced to Japan from the USA and spread rapidly during the 1960’s, when there was a labour shortage. The original American model for OJT had been developed purely for the transfer of skills, but when it was adopted in Japanese workplaces, it changed to reflect the Japanese tradition of in-company training for apprentices. Indeed, it became the main model for training apprentices (a traditional model in which master craftsmen trained their apprentices in a time-honoured and authoritarian manner). This remained the dominant model of OJT until the 1990s, when planned OJT was introduced, which focuses instead on promoting and developing individual aptitudes and preferences.

referred to as the adoption by the economic system of the socialisation function) in the context of social inequality. This contribution will consider these two aspects along with a third – educational aspiration or the motivation to study – which is regarded as one of the proxies for social inequality. To achieve my stated goal of describing changes in the determination of social status and socialisation as well as educational aspiration and the motivation to study, I shall start by setting out the theoretical basis for subsequent comments on elements on the study relating to these three areas.

Theoretical Framework

My contribution draws inspiration from the work of Stefan Hradil (2001) and Rudolf Stichweh (2005), *inter alia*, and makes the following four theoretical assumptions regarding the functions of the (vocational) education system in determining the social status of, and socialising, learners, and those learners' educational aspiration, as Japan makes the transition from a national society to a global society:

- a) As Japan makes the transition to a global society, with its localised social inequality, education is becoming decoupled from employment opportunities and income (Hradil, 2001, p. 33 et seq.). This is because performance in *one* of the function systems (such as success in gaining educational qualifications) can no longer be carried over to *another* system (the employment system, for example), as was the case when Japan was still a national society (Stichweh, 2005, p. 166 et seq.).
- b) The burgeoning of education provision noted in the development trajectories of post-industrial societies means that formal evidence of education is no longer enough to secure the holder a position offering high social prestige. This then changes the conditions under which equality of opportunity is promoted in the educational system, since achieving qualifications and the access to life chances that is contingent on those qualifications can be gauged only by *individual performance* (Hradil, 2001, p. 152 et seq.).
- c) Japan's transition to a global society has widened the gulf between the education system and the economy (Stichweh, 2005, p. 14 et seq.), meaning that schools can now teach only broad technical and business skills rather than the specific knowledge and skills required by business. Business organisations are, therefore, having to take this aspect over themselves (Watanabe, 1987).
- d) In Japan's new global society, the increasing autonomy of the education system that has resulted from the state moving away from the comprehensive school

model has produced greater internal differentiation within the school system than was the case in Japan's national society. The result is that certain groups of learners are excluded, which in turn can produce differentiation in their educational aspiration. This is one possible explanation for the fact that the education and training system is now less successful at integrating learners into society and, hence, for the trend towards replicating social inequality (Stichweh, 2005, p. 54 et seq.).

Working Hypotheses

On the basis of this theoretical framework, I shall now advance four working hypotheses on the status determination and socialisation functions of Japan's (vocational) education system and on the educational aspiration of Japanese learners as the country moves towards a global society. I shall then use empirical social data to test these hypotheses.

- a) Graduates of the country's 12 state and private elite universities – *Kōbe, Tōkyō kōgyō, Hitotsubashi, Waseda* and *Keiō gijuku daigaku* together with the seven traditional state elite institutions (*Tōkyō, Kyōto, Hokkaidō, Kyūshū, Ōsaka, Nagoya* und *Tōhoku daigaku*) (Tachibanaki and Mori, 2005, p. 85 et seq.) – do not enjoy more rapid promotion than graduates from other universities. One measure of this is that seats on the executive boards of major companies are no longer dominated by graduates from elite institutions (as a result of the decoupling of employment opportunities from income and the end to the transferability of educational achievement to the employment system).
- b) On the basis of the value widely attached to the performance principle, there is no longer any correlation between 'wealth' (as measured by a high income and/or substantial assets) and having a degree from one of the 12 elite universities listed above (that is, educational achievement has no influence on wealth).
- c) The growing gulf between education and business means that business institutions must train their own employees in the skills and expertise they need to do the job (that is, the employment system is taking over the socialisation function).
- d) Marked internal differentiation within the school system is reflected in the different educational aspiration or motivation to study of primary school students (as measured by the time they spend studying outside school) when measured against their parents' educational background (that is, the educational system is weaker in performing its integration function).

Testing the Four Working Hypotheses

Educational Qualifications of Board Members in Japan's 30 Leading Listed Companies

Table 1 ranks the Japanese universities with the highest 'output' of executive board members in the country's 30 leading listed companies. More specifically, the figures for executive board members in these companies are ranked according to the university from which they graduated. The ranking shows that in 2005, *Keiō gijuku daigaku* produced the highest number of board members (1,286), followed by *Waseda daigaku* (with 1,195) and *Tōkyō* and *Kyōto daigaku* in third and fourth place respectively (1,002 and 612 board members respectively). Places five to eight were taken by private non-elite universities (*Chūō*, *Meiji*, *Nihon* und *Dōshisha daigaku*). The data for 2007 show that while there was no change in the ranking of the three top universities, there was a change in that of the private non-elite universities: *Nihon* and *Chūō daigaku* now appeared in fourth and fifth place, with 675 and 656 board members, respectively. Moreover, in 2005, only four non-elite universities featured in the top ten in this list. However, just two years later, in 2007, the number of non-elite universities had risen to five. The previously unchallenged domination of the country's top 30 company boards by graduates from the twelve elite universities began, therefore, to decline between 2005 and 2007.

As well as ranking by absolute figures, however, it is also instructive to consider how 'proportionality' in representation of universities in terms of board seats – that is, how well each university is represented in proportional terms in board membership². By this calculation, graduates of the Faculty of Economics at *Tōkyō daigaku*, a traditional state elite institution, topped the 2005 list, with law graduates from the same institution in second place. In third place were graduates from the Faculty of Economics at *Kyōto daigaku*. In fact, the top ten places were occupied by elite universities. In the 2007 rankings, the top three institutions remained unchanged and, moreover, no non-elite university made the top ten. If, then, we consider proportionality of representation, it is clear that that graduates of the 12 elite universities listed are still most likely to become members of these companies' executive boards.

The data presented above show that when the absolute numbers graduating from the 12 elite universities in 2005 and 2007 are considered, graduates from these institutions were not promoted more rapidly than graduates from other universities; board seats in these major companies were no longer the exclusive preserve of grad-

² This is calculated by dividing the number of executive board members with a degree from a specific university by the total number of graduates from that university.

Table 1 Ranking of universities or faculties with the highest 'output' of executive board seats in Japan's top 30 listed companies in 2005 and 2007 (Source: President (2005); President (2007))

Rank	2005			2007		
	University	Number of board members	Proportionality	University	Number of board members	Proportionality
1	Keiō	1,286	0.601	Keiō	1,711	0.825
2	Waseda	1,195	0.553	Waseda	1,405	0.787
3	Tōkyō	1,002	0.546	Tōkyō	1,161	0.659
4	Kyōto	612	0.436	Hitotsubashi (H)	675	0.537
5	Chūō	497	0.435	Chūō	656	0.514
6	Meiji	456	0.419	Kyōto	572	0.445
7	Nihon	453	0.369	Nagoya (W)	543	0.394
8	Dōshisha	416	0.332	Dōshisha	462	0.391
9	Hitotsubashi	339	0.296	Hitotsubashi	396	0.378
10	Ōsaka	319	0.286	Kansai-gakuin	359	0.373

(W) Faculty of Economics (I) Faculty of Law (H) Faculty of Commerce (T) Faculty of Technology

Table 2 Japan's highest tax payers by occupation, 2001 (%) (Source: Tachibanaki and Mori (2005, p. 9))

Occupation	Entrepreneur	Executive board member	Doctor	Lawyer	Stage artist	Sportsman or sportswoman	Other	Total
Region								
Outside Tōkyō	33.3	13.9	23.4	0.3	0.3	1.1	27.7	100.0
Tōkyō	28.9	7.6	1.4	0.6	3.1	0.5	57.9	100.0
Total	31.7	11.6	15.4	0.4	1.3	0.9	38.7	100.0

uates from the 12 elite institutions. However, calculating proportionality leaves the hierarchy largely unchanged in both years for which data are available. Strict adherence to the condition of falsifiability therefore requires that working hypothesis a) be considered as disproved: the decoupling of education from employment opportunities and income that the theory suggests has not been demonstrated. Nonetheless, there was an unmistakable decline during the period under consideration in the influence that formal qualifications had on the employment system in Japan's globalised society.

The Educational Qualifications of the Wealthy

Toshiaki Tachibanaki and Takeshi Mori's 2001 study³ shows that entrepreneurs make up the largest proportion of the wealthy in Japan (measured by high tax bills and/or substantial assets), accounting for 31.7% of this group, followed by doctors (15.4%). A further 38.7% was accounted for by 'other' categories, including those in retirement, those living on income from investments, and those with other occupations (see Table 2).

In their third study of the wealthy in Japan, in 2005, the same authors looked specifically at their educational record. They found that more than half had a university degree, but that there were appreciable differences between the two top groups – entrepreneurs and doctors – with regard to the universities each had attended (see Table 3; Tachibanaki and Mori, 2009, p. 12 et seq.).

³ In 2003, the authors sent questionnaires to tax payers with a tax bill of at least 30 million ¥ as identified from the register of high tax payers in 2001. The response rate was about 8% (Tachibanaki and Mori, 2005, p. 5).

Table 3 University attended by the wealthy according to occupation, 2005⁴ (Source: Tachibanaki and Mori (2009, p. 89))

Occupation Rank	Entrepreneur	Occupation Rank	Doctor
1	Keiō gijuku University (private: Tōkyō)	1	Tōkyō Medical and Dental University (state: Tōkyō)
	Waseda University (private: Tōkyō)		Nihon University (private: Tōkyō)
3	Chūō University (private: Tōkyō)	3	Hirosaki University (state: Aomori)
			Mie University (state: Mie)
			Niigata University (state: Niigata)
4	Meiji University (private: Tōkyō)	6	Kyūshū University (state: Kyūshū)
5	Dōshisha University (private: Kyōto)		Sapporo Medical University (public: Hokkaidō)
6	Nihon University (private: Tōkyō)		
7	Kyōto University (state: Kyōto)		Hokkaidō University (state: Hokkaidō)
	Ōsaka University (state: Ōsaka)		Nagoya University (state: Nagoya)
	Tōkyō University (state: Tōkyō)		Wakayama Medical University (public: Wakayama)

Most of the wealthy entrepreneurs had studied at the elite private universities of *Keiō gijuku* or *Waseda daigaku*. Three elite state universities – *Kyōto*, *Ōsaka* and *Tōkyō daigaku* – also featured among the top ten institutions, however (Tachibanaki and Mori, 2009, p. 89).

⁴ The Japanese education system comprises ‘state’, ‘public’ and ‘private’ institutions. ‘State’ universities are mostly funded by central government, while ‘public’ universities are mostly funded by prefectures or municipalities. ‘Private’ universities are funded by corporate bodies.

Most of the wealthy doctors, by contrast, had studied at non-elite state or public universities (the sole exception was *Kyūshū, Hokkaidō, Nagoya daigaku*). In other words, most aspiring doctors were primarily concerned with studying medicine, and the specific university was not a deciding factor (Tachibanaki and Mori, 2009, p. 89).

Working hypothesis b), that educational success has become decoupled from wealth, has not, therefore, been disproved using these data. However, a distinction should be made between entrepreneurs and doctors in terms of the influence that educational success has on wealth: in the case of the wealthy doctors surveyed, studying medicine had had significant impact on the source of their prosperity, whereas for wealthy entrepreneurs, the key factor was still that they had attended one of the 12 elite universities.

The Socialisation Function of Japanese Companies

The most recent survey conducted by Japan's Ministry of Health Labour and Welfare (MHLW) in 2011 surveyed companies with at least 30 employees and asked about their initial and further training provision during 2010. 67.1% of these companies organised Off JT for their staff, a proportion that had been declining since 2007. However, comparison with earlier years, 2002 and 2000, shows that the percentage of companies providing Off JT was then even lower than it is currently.

In 2010, 57.8% of companies surveyed provided planned OJT⁵; this figure has risen steeply every year since 2000 except 2002 and 2009 (see Table 4; MHLW 2010, MHLW 2011).

From this, I conclude that although there were variations in the extent to which companies provided in-house training from 2000 onwards, the percentage of com-

Table 4 Change in the proportion of companies offering their staff Off JT or OJT 2000–2002 and 2007–2010 (%) (Source: MHLW (2005); MHLW (2010a); MHLW (2011))

Initial and further training	Year	2000	2001	2002	2007	2008	2009	2010
Off JT		64.9	60.2	48.7	77.4	77.0	68.5	67.1
OJT		41.6	44.8	41.6	45.9	59.2	57.2	57.8

⁵ 'Planned OJT' means training or education that can be acquired while the employee is going about his or her everyday work but that is based on a structured plan and can be acquired both incrementally and continuously. Such a model identifies the teacher or tutor, the recipient, the

panies providing Off JT or planned OJT between 2007 and 2010 showed an upward trend compared with the period between 2000 and 2002, which is what the theory suggests.

The data used here do not, therefore, enable me to disprove working hypothesis c).

Learners' Educational Aspiration and Motivation to Study

Since 2003, the Japan Education Longitudinal Study (JELS) carried out at Ochanomizu University under the leadership of Hiroaki Mimizuka has been studying the socialisation, selection and social status determination of children as they grow into adulthood. The 2004 report found a close correlation between the time that 12-year-olds in year six of primary school spent studying outside school (as a proxy for motivation to study) and their parents' educational background⁶:

When respondents were asked how long they spent studying outside school, the most frequent response among those where neither parent had a degree was 'little, if any' (26.3%) or 'about 30 min.' (per day) (33.6%). Among respondents both of whose parents had a degree, the most frequent response was 'about 30 min.' (27.7%) or 'about 60 min.' (24.0%) (see Table 5 for a full breakdown). Responses from students where only the mother had a degree were virtually the same as those from students neither of whose parents had a degree. Responses from students where only the father had a degree were, however, similar to those from students both of whose parents had a degree (Nakajima, 2004, p. 11 et seq.).

The data portrayed here show that the primary school students surveyed differed in relation to their motivation to study (as measured by time spent studying) and that the differences were accounted for by their parents' educational background. Working hypothesis d) can therefore be shown not to be disproved on the basis of these data.

duration of training and the training content. This is a modified form of (simple) OJT, which is restricted to occasional learning arising from observation and emulation.

⁶ The sample for the study presented here were 1,202 students attending schools in the cities of Kantō region (Tōkyō and the surrounding prefectures), who were surveyed between October and December 2003 (Mimizuka, 2007). 1,194 valid responses were received.

Table 5 Amount of time spent studying outside school: year six primary school students, by parents' educational background (%) (Source: Nakajima (2004, p. 21))

Time spent studying	Little if any	About 30 mins	About 60 mins	About 90 mins	About 120 mins	About 150 mins	About 180 mins	About 210 mins	210 mins or more	No response
Parents' educational back-ground										
Neither has a degree	26.3	33.6	20.7	8.3	5.0	0.7	1.3	0.4	1.9	1.8
Only mother has a degree	24.4	44.4	17.8	4.4	4.4	2.2	2.2	0.0	0.0	0.0
Only father has a degree	18.8	29.7	21.1	12.5	4.7	3.9	3.1	2.3	3.9	0.0
Both have a degree	12.5	27.7	24.0	10.3	9.2	3.0	3.3	1.5	7.4	1.1

Discussion

In my introduction, I referred to the three characteristics of Japan's credential society from the 1960's up to, and into, the 1990's – a time when Japan was still a national, rather than a global, society. This raises the question of what changes there have been in the status determination and socialisation functions of the education system and in educational aspiration as Japan has transformed into a global society. The working hypotheses relating to the decoupling of education from employment opportunities and income have been disproved by the data cited, although not those relating to the educational system's socialisation function or to educational aspiration or the motivation to study.

The Impact of Educational Achievement on Social Mobility

In Japan's national society, selection of candidates for promotion within companies was traditionally achieved through the status determination function of the educational system. Educational achievement was, in this model, the determining factor in determining social status. Central to this mechanism was what are known as 'Japanese management practices', in which the seniority forms the criterion for remuneration and promotion. For all practical purposes, there was a single threshold for social selection – entry into the employment system.

As Japan has become a global society, however, the system whereby workers were promoted according to the seniority principle has collapsed: when companies make internal promotions, candidates are now selected on performance instead. My research has shown that the central criterion for promotion is no longer an individual's educational achievement but his or her performance within the company.

The positive impact on an individual's subsequent career of graduating from an elite university is, therefore, largely restricted to the recruitment stage; it no longer has any long-term impact on career development, such as promotion to the executive board. In Japan's globalised society, therefore, performance has come to dominate an individual's membership of a particular social class, with educational achievement now substantially less significant that it was during the 1960's and 1970's.

Adoption of the Socialisation Function by In-company Initial and Further Training

Despite the low importance attached to the selection function in Japan's education system, there has been no corresponding increase in the importance of its socialisation function. Between 2000 and 2010, in-company initial and further training has become increasingly important in transferring knowledge and in socialising employees. To put it another way, over the same period, recruitment to a company has improved an individual's prospects of vocational education and training. The VET system and the organisations sponsoring it have, however, become more complex as a result of the decline in numbers being recruited: companies are no longer virtually the sole sponsors of VET as they were during the post-war 'economic miracle' in Japan. Central government, prefectures and municipalities are all increasingly involved in VET and, for example, the numbers taking part in such training rose from 255,175 in 2008 to an estimated 372,154 in 2010 (MHLW, 2010b); this compares with just 124,855 in 1969 (Georg, 1971, p. 128). There is now also multiplex sponsorship of the socialisation function.

A further important finding to emerge from my study is the divergence of the educational pathways of the wealthy: the typical educational model for an entrepreneur – attending a high-status private university in Tōkyō – is now radically different from that for a doctor, who would typically study at the Faculty of Medicine in a provincial state or public university. When Japan was a national society, the discipline an individual studied was of only minor significance in achieving a prestigious position, such as an executive board member in a major company; what was most important was the status of the university concerned. Today, the discipline has much greater importance, along with differentiation between sections of what was formerly a more homogeneous group of the wealthy or of the elite.

The findings of my study have demonstrated that the ideal of a 'winner' in contemporary Japanese society has changed radically from the traditional model of the elite. For example, the board member in a major company with a high salary, a high level of social influence and significant educational achievements is no longer seen as a social 'winner'. The traditional model for success, in which there was a progression from attending an elite university to advancement in the company hierarchy as a management candidate to a seat on the board and thereby to a high salary and high social prestige – is significantly less valid today. In particular, the former close linkage between career advancement in a major company and a very high salary has been broken. Today's entrepreneurs (who are more likely to be running small and medium-sized businesses) and doctors are the new wealthy in Japan. Although they

do not enjoy any significant influence on society, they enjoy the highest social prestige of all occupations. Typifying the 'elite' has, therefore, become more complex.

This greater diversity in training undergone by the wealthy or the elite can be attributed to a 'new division of labour' (Scheuch, 1998, p. 149) in Japan's globalised society, in which specialist knowledge is increasingly important to the individual in carrying out his or her role in the employment system. This is a new, and highly significant, trend and is linked to development of the new economy. However, the theories used here cannot adequately account for it, and this contribution cannot explore this aspect.

Mass Educational Aspiration

This contribution finds that, in a 'global society', Japanese schools are no longer practically able to motivate all students equally to study. This has produced polarisation of the values and attitudes of young people as well as of their motivation to study.

This trend may also, however, reflect the greater complexity of the elite 'model', which has resulted in young people finding it difficult to identify an example to which they can aspire.

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Trends and Challenges of Vocational Education and Training in Korea

Seung Il Na

Introduction

Korea has achieved a rapid economic development from 1960's to 1980's, which is widely known as 'the miracle of Han river'. It is a surprising fact that a country, ruined by the war in the early 1950's, grew into world's thirteenth country in terms of GDP in 2006 (Kim et al., 2007). Since 1960's, the structures of industries and jobs have greatly changed from primary industries to tertiary ones through rapid industrialization. In this change, the importance of good human resources has brought relief for Korea to overcome the issue of lacking natural resources and enabled it to invest intensively in Vocational Education and Training (VET) (Huh, 2007). Korea has been able to promote the development of light industry in 1960's, heavy industry in 1970–80's, and up-to-date technology industries since 1990's. Also, VET has provided an equal education for all the people by providing with a way to acquire technology and achieve success (Lee, 2004).

However, in spite of this success, VET needs to be adjusted as the knowledge-based society has come, the global economy has faced crises, and population structure has changed since the early 2000's. Recently, the demographic profile of Korea has been aging due to the decreasing birth rate and the extended life expectancy. In the meanwhile, the retirement of the baby boom generation is resulting in the outflow of the essential technicians who have sustained the industries until now. In addition, the structures of industries and the patterns of employment have been changed and they have integrated with types of business and occupations which have been generated or become extinct (Jyung et al., 2006). As of March 2011, the

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youth unemployment rate was as high as 9.5%; as a result the chance of competent new workforce entering the labor market decreases, and mismatch between jobs and workforce is deepened (Na, 2010). Nevertheless, the population of foreign laborers working in Korea continues to increase up to 2.67% of the entire populations in 2011.

In this changed situation, Korea's VET has been greatly challenged, and to improve this, it has planned and implemented multilateral policies. For example, since 2010 at the secondary vocational education level, a reorganization of vocational high schools has been pursued through 'Strategies for Advancing Vocational Education in High School'; at higher vocational education level, plans to renew junior college vocational education have been implemented through 'Formula Funding for Strengthening the Capacity of Junior College Training Excellent Talents' since 2008. Also, in the field of vocational training, a card system for employee's skill development and a vocational skill development account system have been introduced to support consumer-oriented vocational training.

As mentioned above, even though Korean VET experienced many developments, it is still progressing. Fortunately, not only the Korean government but diverse stakeholders of VET have shown interest and support. Therefore, this paper aims to review the current situation and changes in VET, and to explore challenges and implications for further innovations. This paper focuses on the achievement and recent conditions of the VET which have contributed to Korea's economic and social development for the last 50 years. This paper examines VET with respect to: present conditions; shifts; achievements; issues; and prospects.

VET System

VET refers to vocational education and vocational training. Vocational education refers to acquiring and enhancing knowledge, skills, and attitude necessary for the performance of one's jobs within regular school education, which is mainly the responsibility of the Ministry of Education, Science, and Technology (MEST) and 16 metropolitan and provincial offices of education. Vocational education consists of pre-vocational education, secondary vocational education, and higher vocational education by school level. Pre-vocational education is mainly carried out in elementary, middle and general high schools. Secondary vocational education refers to a three-year course mainly in Meister high schools customized for industrial demand, and in the specialized vocational high schools. Lastly, higher vocational education refers to education in junior colleges, technical universities,

industrial universities, vocational education-related universities and in-company colleges (Kim et al., 2009; Kim et al., 2010; Na, 2009).

Vocational training refers to training provided for job seekers, laborers, and the unemployed apart from regular school education to cultivate or enhance job-related abilities in a short time, for which the Ministry of Employment and Labor (MOEL) is mainly responsible. Vocational training institutes include vocational-skill training and development facilities, corporations, organizations, lifelong-education facilities by 'Lifelong Education Act', tutoring institutes by 'Act on the establishment and operation of institutes and private lessons', training facilities made by each individual employer or business groups of employers for their laborers and other training facilities, established by individual laws (HRD-Net, 2008; Jeong, 2008; Kim et al., 2009; Oh and Kim, 2005).

Trends and Challenges of Vocational Education

Pre-vocational Education

Pre-vocational education, also called general vocational education, refers to education that is carried out through practical art subjects in elementary school, technology and home economics, and career and occupation subjects in middle and high school to foster values and various abilities necessary for students to lead life, promote career and understand their characteristics.

In elementary school, practical art subjects are taught to only 5th and 6th graders. Although, in the past, the subjects had been taught from 3rd to 6th graders, it became limited to 5th and 6th graders since 1997. The class hours also decreased to two hours a week (MEST, 2009). Moreover, in 2011, the practical arts curriculum has been organized and operated in 'science/practical arts' subject group, so actual class hours have been further decreased, and the curriculum only includes core contents (Jeon, 2009).

In middle school (7th to 9th graders), pre-vocational education is carried out through technology and home economics subjects as core curriculum, and with the recent revision of the curriculum in 2009, it is changed to the electives, 'science and technology/home economics'. Meanwhile, career and occupation subject can be included as an elective. In high school, technology and home economics subjects are organized as an elective, and students can independently choose a subject (MEST, 2009). Agricultural life science, engineering technology, home economics science, foundation and management, etc. are allowed for an intensive selective sub-

ject of technology and home economics; however, most schools do not offer in their preparation of college entrance exam-centered curriculum, which is pointed out as a serious problem at the level of pre-vocational education.

Meanwhile, about one fourth of academic high schools offer 'career and occupation' subject; but, they do not have a teacher who specializes in career education. Some teachers who lack class hours share the classes, so teaching contents do not have consistency and this is not considered important (Lee, 2008). So, the government has set up the qualification of career counseling teacher in 2011 and assigns teachers who take exclusively charge of career education according to school setting (MEST, 2011).

Like this, it would be very important to secure the affiliation, hierarchy and continuity of educational contents in pre-vocational education, which should be carried out variously by school levels. Nevertheless, the connectivity of educational contents among school levels is lacking overall (Kang, 2010). It is necessary to prepare a plan to improve this.

Secondary Vocational Education

Administration and Policy

Administrative organizations that are in charge of vocational high schools may be broadly divided into central administrative organizations and local ones. MEST, that handles all policies and related departments in each industry, falls into the central administration. The departments in charge of the education offices in cities and provinces, that handle vocational high school policies, and the industry-related departments in charge at cities, provinces, and districts, fall into the local administration (Jyung, 2005). Importantly, because the budget for vocational high schools has been transferred to local administrative organizations since 2005, establishing the size of projects at the unit of cities and provinces, and maintaining and developing them, have become important issues.

Meanwhile, MEST recently announced 'Strategies for Advancing Vocational Education in High School (2010)' and arranged the direction of secondary vocational education policies to approach the 'reorganization to vocational education institutions specialized in each field' and the 'creation of conditions of first employment-next education' (National Employment Strategy Meeting, 2010). Through this, it proposed a plan to reorganize all vocational high schools to Meister high schools and industrial-educational, cooperation-type specialized vocational high schools by 2015 and to promote the conversion of other vocational high schools to general high schools.

Recently MEST has increased the employment of specialized high school graduates and announced 'the educational system development plan for work-school balance (2011)' to establish systemic foundations for work-school balance (Presidential Council on National Competitiveness, 2011). Through this plan, enhancing vocational education centered on fieldwork experience, improving conditions for work-school balance, and increasing educational participation in the industries will be taken into action, and the support for creating conditions for 'first work-next school' of the specialized high school graduates will be strengthened.

Since the mid-2000's, the government has established and promoted a variety of policies to reorganize vocational high schools into specialized vocational high schools and Meister high schools in order to increase the employment rate of vocational high schools, and to resolve the discord between the demand and supply of the workforce. Regarding the expansion of specialized high schools, the government suggested that 500 vocational high schools should specialize in each industry through 'Innovation Strategies of Vocational Education System (2005)' and 'Strategic Plan for Cultivating Vocational High Schools for Realization of Hope (2007)' by 2020. Also, regarding Meister High Schools, the government devised a plan to select vocational high schools to designate them as Meister High Schools based on 'Cultivate the Korean Meister High School (2008)'. In August 2011, 21 Meister High Schools are operated and seven Meister High Schools will be opened in 2012. Under 'Strategies for Advancing Vocational Education in High School (2010)', the government announced that it plans to increase the number of Meister High Schools to 50 by 2015.

Vocational High Schools

Vocational high schools are typical schools that represent vocational education at the level of high school, providing opportunities for continuing education through the training of the changing industrial workforce or through basic vocational education at high school level. Especially, vocational high schools had greatly contributed to the cultivation of the workforce needed for the economic and industrial development in the 1970's to 1980's; however, they have been criticized for not being able to cultivate the workforce under recent changes of economic environment and the acceleration of the development of knowledge and technology (Na et al., 2007).

The number of vocational high schools has steadily increased by 2000 because of the economic boom in the 1980's and general-specialty 5:5 policy in the 1990's; however, entering upon the 2000's, it continuously decreased. As of 2010, there are 692 vocational high schools, which are 30.7% of the total high schools (Center for Education Statistics, 2011). Vocational high schools consist of 21 Meister high schools (3.0%), 40 special-purpose high schools (5.8%), 168 specialized vocational

high schools (24.3%), 275 general vocational high schools (39.7%), and 187 comprehensive high schools (27.1%) (National Employment Strategy Meeting, 2010).

The Meister high schools were found in 2010 to transit students from academic life to employment upon graduation. One of the major reasons for the establishment of these institutions is that the majority of vocational high school graduates continue their academic life rather than entering employments and that there are shortage of skilled workers in industries.

Since 1998, the specialized vocational high school came about to be the new type of vocational high school that is comparatively small in size and offers new nontraditional, narrowly specialized programs. In addition, the specialized vocational high school is a successful model for secondary vocational education in Korea.

The general vocational high schools can be classified by the contents of each individual school's conventional focus – agriculture, business, trade, and fishery, etc.

As a result, the types of school overlap each other's purpose/function, creating an issue regarding the inefficiency of secondary vocation education. As of June 2010, the Korean government announced a new policy to cultivate two types of vocational high schools: 50 of those vocational high schools which will be Meister High Schools and 350 of them which will be Specialized VHSs by 2015 (National Employment Strategy Meeting, 2010). The remaining vocational high schools will become general/academic high schools, or be closed due to lack of students. This reorganization of the vocational high school system aims at preparing conditions for 'first employment-next education' through reorganization to a work-based curriculum.

School Curriculum and National Curriculum

The vocational high school curriculum is organized and operated autonomously at the school level according to the national-level curriculum guide. This national-level curriculum guide has been changed periodically with the changes within industrial society, and by 2010, the school curriculum followed the 7th National Curriculum that was developed in 1997. Since the introduction of the 7th National Curriculum, the system to revise has been modified and operated as a nonscheduled system of the curriculum which allows revisions to the curriculum anytime and resolves the inefficiency of the scheduled revision method (Jang et al., 2010). Because of this revising system, the 7th National Curriculum was revised in 2009 along with its title; it is called the 2009 Revised National Curriculum which is effective this school year.

After the revision of the 7th National Curriculum, the number of credits (units) required to graduate from vocational high school decreased from 216 to 204 over the course of three years as the number of school days per week decreased from six days (Monday to Saturday) to five days (Monday to Friday). The curriculum majorly

consists of academic subjects, vocational subjects and creative experience activities. The minimum units to complete in each category are 72 units for the academic subjects, 80 units for vocational subjects and 24 units for the creative experience activities (MEST, 2009). Meister high schools and specialized vocational high schools are allowed to exercise much more discretion in designing and implementing curriculum so that they realize an education that is in line with the foundation goals and characteristics of the schools. And as for education that is applied to industrial demand, the proportion of organization for specialized courses is higher than ordinary courses (Jang et al., 2008; Na et al., 2007).

Nevertheless, it is constantly pointed out that many curricula in vocational high schools do not correspond with the demands from industrial sites (Park et al., 2010). Hence, recent curricula of vocational high schools have changed to strengthen the employment functions, reinforcing the operation of vocational education customized to the site (Jang et al., 2010). For example, newly established Meister high schools offer work-based curricula based on the National Competency Standards (NCS) (Kim, 2011; National Employment Strategy Meeting, 2010). The NCS is a guide developed by the government to show the knowledge, skills and attitudes required for workers to perform well in their jobs.

In addition, since 2008, the MEST has encouraged the related central ministries to support changing the existing vocational high schools into the specialized vocational high schools that produce the workforce needed in their fields (Na et al., 2010). In the future, it is expected that efforts to construct a system that can reflect demand from industrial sites to the development and operation of curricula will be made continuously.

Vocational Teachers

The number of teachers in vocational high school continued to decrease from 40,977 in 2000 but 35,688 in 2010 with the decrease of the number of schools and students each year. In 2011, the number of teachers decreased; unlike previous year's ratio, the ratio of academic teachers to vocational teachers in 2011 is 17,138 to 15,096, showing more academic teachers than vocational teachers (Center for Education Statistics, 2011).

These vocational teachers hold at least one of the 23 different teacher licenses. In addition, because there was a myriad number of a specific teacher licenses, the government decided to integrate into 23 teacher licenses in January of 2000. They had two given routes: the regular teacher education program and the special teacher training course attached to a college major. While the regular teacher education program is available for every graduate, the special teacher training course, accredited by the MEST, would issue teacher license to only 10% of the graduates. Interest-

ingly, however, majority of the vocational teachers come from the special teacher training course. On the other hand, majority of the academic teachers come from the regular teacher education program.

Vocational high school teachers teach, on average, 18 h of class; however, with the given circumstances, vocational teachers need to cover several subjects to fulfill their teaching load, supervise the occupational experience or internship, and provide vocational guidance for the students, while academic teachers have one or two subjects. In addition, vocational teachers need to update their skills and knowledge according to the emerging technology and development, resulting in more stress and burnout for the teachers. Vocational high schools are increasingly hiring adjunct teachers to strengthen field suitability. The adjunct teachers who teach part-time are selected among industry expert, with certain qualification, working for companies which signed industry-academic cooperation. Unfortunately, with the lack of financial support and the clumped geographical distribution, local vocational high schools cannot afford to have adjunct teachers.

Vocational Students and Careers

The number of vocational high school students decreased from the zenith of 810,651 in 1990 to 466,129 in 2010, which is 23.8% of the total high school students (Center for Education Statistics, 2011). The main reasons for this decrease of students include the increase of difference in wage by level of education, the advancement of production structure, the regularized impact of low birth rate, the steady expansion of college quota and students' avoidance of vocational high schools (National Employment Strategy Meeting, 2010).

Most vocational high school students have low academic records when they enter the school, their self-esteem and all abilities are relatively lacking (Jyung et al., 2006). So the drop-out rate of vocational high school students has been higher than that of general high school students since 2000. As of 2010, the drop-out rate of vocational high school students is 3.7%, which is more than three times that of general high school (1.2%) (Center for Education Statistics, 2011). However, in recently established Meister high schools, the records of new students are greatly improving, which is because they provide the students with various benefits such as tuition exemption, scholarship and the operation of various programs by talent and aptitude (Kim, 2011).

Meanwhile, for the career after graduation of vocational high school students, the college entrance rate caught up employment rate for the last decade: as of 2010, entrance rate (71.1%) is far higher than employment rate (19.2%) (Center for Education Statistics, 2011). It seems to be caused by the increase of students' and parents' demand for entrance into colleges because of the liberalization of college founda-

tion, the enhancement of income level and the decrease of the number of children (National Employment Strategy Meeting, 2010). Especially, the gradual decrease in employment rate of graduates in their majoring fields urgently calls for measures on the issue.

Higher vocational Education

Administration and Policy

Higher vocational education usually refers to vocational education carried out in junior colleges, industrial universities, technical universities, and general universities, etc. The administrative authority of higher vocational education mostly belongs to MEST. Particularly the university support team of MEST is the one in charge of establishing and improving general policies and reforming the systems of higher vocational education. In addition, some other universities that aim to develop human resource in specific areas are under control of the related ministries.

Each higher vocational education institution can be categorized as a national, public, or private university according to the type of operating agents. As of 2010, 88.6% of the entire higher education institutions and 93.8% of the entire junior colleges were run by private institutions. Because the private institutions have higher dependence on private financial resources, such as students' tuitions, there are concerns about lack of investment on educational quality improvement.

Meanwhile, the policies about higher vocational education are focusing on enhancing capabilities of supporting students' employment through vitalizing industrial-educational cooperation. Projects such as 'Junior college development project through industrial-educational cooperation', and 'Junior college education competency enhancement project', have been initiated. 'Junior college development project through industrial-educational cooperation' has been geared since 2005 for the purpose of developing human resources which are creative, well-adjusted to work, and customized to the demands of the industry through industrial-educational cooperation in the junior college level. It has been considered successful in terms of enhancing industrial-educational cooperation (MEST, 2009). The 'Junior colleges' education competency enhancement project' has been under way since 2008 for enhancing education competency of junior colleges. It provides financial support for junior colleges with good performance and potential to improve their educational quality and students' employability after graduation (Junior college education competency enhancement project support portal, 2010).

For the future there are plans to reform the former industrial-educational cooperation support project and launch an 'industrial-educational cooperation lead-

ing college development project' not only for junior colleges but also for four-year universities to create and spread various industrial-educational cooperation promotional models. Through this, starting 2012, it plans to focus on developing 50 universities, chosen as 'industrial-educational cooperation leading universities,' to lead the development of human resources that can meet the demands of the industries (MEST, 2011). In addition, 'Master plan for fostering world-class junior colleges (2011)' has been announced to concentrate on developing junior colleges with students' employability potential and sound financial conditions. According to the plan, 21 junior colleges will be selected by 2013 and will be intensively promoted as leading junior colleges equipped with global vocational education standards.

Higher Vocational Education Institution

As of 2010, there are 145 junior colleges, 179 universities, 11 industrial universities and one technical university. Compared to the year of 2000, there are 18 more universities, whereas junior colleges and industrial universities are decreasing in number.

Junior colleges, as the major institutions for higher vocational education, are run with the purpose of developing professional workers. In 1996, any educational foundation that meets specific criteria could become eligible for establishing colleges. Starting in 1997, the student quota of regional universities was given autonomy if they meet certain conditions. These policy changes have resulted in quantitative expansion.

Recently, however, the number of junior colleges steadily decreased from 158 in 2000 to 145 in 2010. This may be due to the decrease of new junior college students, restructuring caused by merger policy among junior colleges and conversions to four-year colleges accommodating students' demands (Kim, 2010). Particularly, many junior colleges in the provinces are facing serious problems with decreasing students and are in danger of closing. As a temporary solution, they often attract international students from China and elsewhere.

Meanwhile, to promote the status of junior colleges and eliminate the juxtaposition to other universities, the title of the head of junior colleges changed from 'dean' to 'president'. Also, in Korea, the name, 'Daehakgyo' had been used only for four-year colleges while 'Daehak' for junior colleges, but a recent law allows junior colleges to use the title, 'Daehakyo'. This has systematically made the status of junior colleges not quite different from universities, ergo, there are discussions for establishing their identity as higher vocational education institutions that can be differentiated from universities.

Universities can be considered as higher vocational education institutions in that they are recently emphasizing on the job training and industrial-educational coop-

eration. Also, the roles of universities as higher vocational education institutions are expanding as the demand for high-quality human resources is increasing in the knowledge-based society, and the curricula in the universities are covering the content areas which have been taught in junior colleges before.

Industrial universities were designed to provide working youth, workers and other people who have completed, or failed to complete, school education with the opportunities for re-education and lifelong education. They were introduced in 1981 with the name of open universities, and renamed as industrial universities in 1996. Currently, they are not operating with the original purpose of its foundation but are very similar to general universities. Many industrial universities have changed or integrated into general universities. As a result, while there were 19 in 2003 these has decreased to 11 in 2010. The number of industrial universities is likely to continue to decrease (Na and Kim, 2007). A technical university is an educational institution for employed workers in industries which provide formal university education. It emphasizes lifelong education, and there is one technical university under MEST. However, the technical university is also not operating with the original intention as a university for employed workers because university education is becoming more common and it is losing competitiveness compared to general universities.

Higher Vocational Education Curriculum

Students can take a maximum of 24 credits per semester and should take a minimum of 80 credits for two-year course of study and a minimum of 120 credits for three-year course of study. Advanced specialty courses for bachelor's degree at junior college are available. Students with working experience of one year or longer after graduating junior colleges are qualified to apply for the courses. To obtain a degree, students with two-year course should attend the course for four semesters or longer while students graduated from three-year course should take the course for two or more semesters. Completing at least 140 credits is required including transferred credits from junior colleges.

The courses of study at junior colleges consist of the liberal arts curriculum and vocational curriculum. The courses are comprised of essential subjects for learning fieldwork, and much more practicums are offered than theory courses. Moreover, junior colleges are revitalizing continuing education for employees in the workplace by carrying out college education commissioned by the employers and broadening their horizons as lifelong education institutions by offering bachelor's degree programs in the field of vocational education.

The courses of study at junior colleges have been criticized for not having been advanced systematically to meet the demands from business and industrial sectors

(Lee and Kim, 2010). In order to solve this problem, 'Junior college specialization project' has been launched, and three sub-projects, 'Domain specialization project', 'Customized education project', and 'Joint major project', have been implemented. Lately, 'Project for supporting customized educational programs to industrial demands' has been introduced.

They are trying to reform and manage the curriculum designed for industrial fields in order to produce students who are competitive and adaptive to industrial and technical changes. For this purpose, specifically, the alliance among the Sector Human Resources Development Council (Sector Council), the Local Sector Councils and industrial sectors have been formed, and the NCS has been adopted.

Recently, universities are developing human resource for the emerging industries such as convergence industries and bio industries through the specialization projects.

And as for the green industry, that Korean government is paying careful attention to, specialized graduate programs were chosen to offer educational programs for nurturing specialized human resource. On the other hand, industrial universities or technical universities have a problem in that they have not differentiated themselves from other general universities in accordance with their original goal of expanding lifelong education and offering specialized vocational education.

Higher Vocational Education Professors

In terms of the status of faculty at junior colleges in 2010, the faculty consists of full professors (58.9%), adjunct professors (37.9%), and part-time lecturers (3.2%), which implies low full-time faculty ratio. And the number of students per professor at junior colleges in 2010 is 39.4 students, which is very high compared to 28.9 students at universities. This is caused by lack of financial resource at junior colleges, and will lead to decreased quality of education.

The professors at junior colleges have a variety of tasks besides teaching and research activities. Especially as the situation of under enrollment of new students continues to aggravate, the burden of recruiting new students and school promotion activities have been increased, and the teaching-related activities have been decreased (Shin et al., 2007). In addition, the abilities to teach practical skills are not sufficient due to the lack of experience in industrial fields (Kim, 2010). Most of the professors have expertise in the academia with a minimum of master's degrees but have relatively less practical understanding and expertise in industrial fields.

As the professor position openings for the industrial field experts are limited at junior colleges, the professors' practical expertise is often insufficient, and, therefore, the curriculum reflecting the demands from the field is not offered and operated. This all results in the lack of teaching practical skills (Jang, 2006).

Recently, to identify industrial demands and apply them on the curriculums, there are projects to support onsite training for university faculty and short-term (less than four weeks) training sessions to learn the technology trends and changes in industry.

This issue also applies to four-year universities. Professors are equipped with knowledge and research skills in their major areas, but often lack instructional skills. To solve this problem, universities set up resource centers for learning and teaching for teaching skills development (Na, 2004).

Higher Vocational Education Students and Careers

The number of students at junior colleges in Korea was 913,273 in 2000, representing 29.2% of the entire higher education institutions but has gradually decreased to 23.7% (767,087 students) in 2010. Junior college students are less than one quarter of the entire students in higher education, so it shows the ongoing decrease of junior college students accompanied by the decrease of junior colleges in number (Center for Education Statistics, 2011). It is anticipated that junior college students will continue to decrease due to the ongoing decrease in school-age population itself and increasing students entering four-year universities. On the other hand, the number of university students continued to increase from 1,665,298 in 2000 to 2,028,398 in 2010.

Junior colleges have the students with a lot of different kinds of educational backgrounds, and feature the coexistence of heterogeneous groups of learners because there are many differences between the academic backgrounds or educational admission, along with various admission methods, such as the general admission, special admission, college graduate quota and admission commissioned by employers etc. (Kim, 2010; Mun et al., 2005). Thus, junior colleges should teach the diverse groups of learners such as the learners who wish to transfer, adults for the purpose of pre-vocational education, students for commissioned study, students for readmission after university graduation, and workers and unemployed people in addition to the typical students who enter the colleges right after high school graduation (Jang, 2006). Moreover, in many cases relatively outstanding students go to university, while the students with poor academic skills enter the junior colleges due to the decrease of new students at junior colleges and the increase of special admission. Therefore, the basic learning skills of students at junior colleges are relatively not as good (Lee and Jung, 2003).

The employment rate of the junior college graduates is 86.5% in 2009, and it had increased from 79.7% in 2003. The increase in the employment can be explained as the results of the improved employment structure in the industry, the policies support for junior colleges, improved social awareness, reinforcement of industrial-

educational cooperation, and enhanced quality of individual college, etc. (Korean Council for College Education, 2011).

In the meantime, four-year universities are getting an increase in the number of students thanks to the Korean society preferring higher levels of education. However, the employment rate of 2010 is as low as 51.9% (MEST, 2011), and it could be considered as a consequence of the job mismatch phenomenon, where people wish to get a job only in the big companies and avoid jobs in the small companies, the skill mismatch between graduates' competencies and corporate needs, and the lack of job opportunities caused by difficult social and economic situations. In response to these issues, the government is implementing several policies for boosting employment, such as 'the internship to employment program for young people'.

Trends and Challenges of Vocational Training

Administration and Policy

The administration and policies related to vocational training are mainly conducted by the Ministry of Employment and Labor, Regional Ministry of Labor, and affiliated organizations. The name of the Ministry of Labor (MOL) changed to the Ministry of Employment and Labor (MOEL) on 5 July 2010, which shows that the integral functions of employment policies have been highlighted as the significant employment issues for the nation. The roles and responsibilities of the MOEL about vocational training are specified based on the 'Workers Vocational Skills Development Act' (Korea Law Service Center, 2011).

Through the local employment and labor offices, the MOEL takes the overall responsibility of the vocational training administration, the simple administrative tasks, such as the approval and guidance of vocational skill development training facilities and programs. The Human Resources Development Service of Korea is in charge of the public vocational training and qualifications while the training for the vocational training teachers is conducted by the Korea University of Technology and Education (Jeong, 2008; Kim et al., 2009). The functions of administrative organizations for vocational training are expanding with the increasing emphasis on employment and skills development. The 'Master Plan for Workforce Skill Development' of the MOEL suggests directions for vocational training policies at the national level. With the recent trend of emphasizing employment policy, the Master Plan is presented in the 'Basic Plan on Employment Policy' as part of efforts for workforce skill development.

Currently, Korea's vocational training policies are being promoted for the purpose of 'increasing competitiveness through the human resource development, the employment security and building support systems for the lifelong development of ability of workers' (HRD-Net, 2008; MOEL, 2011). The existing vocational training has been focusing on the government-led technology and skill manpower training and policies of improving the vocational training of incumbents, but recently emphasizing lifelong learning and maintaining employment dimension are reflected.

The vocational training financial resources can be distinguished with the public and private funds. The public funds are the budget of the MOEL, related government departments, and the regional Ministry of Employment and the Labor, while the private funds are related to the vocational skill development (Baek and Kim, 2003; Lee, 2004). The vocational training financial resources have been continuously increasing depending on the significance of the employment and vocational skill development policies.

Meanwhile, the vocational training is closely connected with the national technical qualification which is managed by the MOEL, and the possibility of correlations among vocational education, vocational training, and qualification increased with the addition of provisions about 'NCS' and 'qualifications framework' in the 'Framework Act On Qualifications'. It is presented in a variety of ways, such as recognition of proficiency through the national technical qualification, recognition of qualification as credit through the academic credit bank system (Kim et al., 2009). Thus, the role of the vocational training associated with the qualifications systems will be expanded, and the results of vocational training through the connection with the vocational education will be improved.

National Technical Qualification System

The National Technical Qualification (NTQ) is the evaluation and recognition of the necessary job performance at the industry or the degree of learning technology that depends on the uniform standards and procedures by the government (MOEL, 2010b). The MOEL takes the overall responsibility of the management, and operation of the NTQ should be conducted by other institutes such as the Human Resources Development Service of Korea. The Korean Qualification System is benchmarked to the German Qualification System. The NTQ system was institutionalized based on the proclamation of National Technical Qualifications Act in 1973. After that, the areas and types of NTQ have been continually expanded and improved. The government is making efforts to establish the 'Basic Plan for

Development of National Technical Qualification System' and to conduct a qualification system with industrial demand since 2007, and it is promoting for improvement through the evaluation each year. Nevertheless, the issues about usefulness of NTQ are still being raised, so the improvement for increasing the utilization is required. Recently, the MOEL is making efforts to reform the NTQ system through expanding the development of the national competency standards and for preparing introduction of the program-based qualifications. Accordingly, the connection among industry, vocational education training and qualifications system should be strengthened, and the role of the vocational training in the qualifications system is expected to be strengthened.

National Competency Standards (NCS)

NCS is the standardization of derived, required skills for the workers to accomplish the duties in their jobs (MOEL, 2010b).

It establishes more strengthened connections among work, education and training, and the qualification system, and formed work-based training. In May, 2010 the NCS was made by integrating National Occupational Standard (NOS), which had been developed by MOEL and Human Resources Development Service of Korea since 2002, with Korean Skill Standards (KSS), which had been developed by Ministry of Education and Human Resource Development and Korea Research Institute for Vocational Education & Training, in order to prevent using two mixed terminologies and wasting national budget on duplicated investigation.

Now, the two terminologies became one terminology: NCS. Furthermore, each government department has clearer roles. The NCS Development project will be generally monitored by Ministry of Employment and Labor. However, the work to develop NCS will be mainly implemented by Human Resources Development Service, and the research will be conducted by Korean Research Institute for Vocational Education and Training. The standards have been developed for 254 kinds of jobs since 2002; they are expected to be widely used for curriculum development of vocational education and training. Moreover, Korea has arranged the training system that grants qualification to people completing training courses and program to be developed based on NCS. Thus, it is expected that NCS will be more often used in vocational education and training.

Training Institutes and Facilities

The vocational training institute and facilities are the places for the job seeker, employees and unemployed person to cultivate or improve the job-related ability in a short time without general formal schooling. They are divided into public and private depending on their training principals. Korea's current public vocational training institutes and facilities in 2010 are composed of 34 campuses of Korea Polytechnics, eight Korea Chamber of Commerce & Industry Workforce Development Institutes, one Korea University of Technology and Education, and five vocational schools attached to local governments; a total of 48 units are being managed. When established in 1997 by the technical college law, Korea Polytechnic College had originally the name Technical College. In 1997, Technical College gained the right to grant Bachelor's degrees of industry (two-year degree courses). In 2006, 'Unified with Job' was replaced into 'Korea Polytechnic College' composed of 11 colleges and 34 Campuses.

The private vocational training institutes and facilities are composed of 68 Corporate Training institutes, 959 Ministry of Employment and Labor (MOEL)-designated vocational training institutes, 5,537 training institutes except designated institutes; a total of 6,564 units are being managed (Jeong, 2008; Kim et al., 2009; MOEL, 2010a).

The vocational training institutes and facilities have been increasing steadily since 1967, when government-led vocational training started to be conducted in earnest. The public sector is maintaining the certain scale, but the private sector is being expended sharply (Park, 2009).

The contents of vocational training have been changed according to the industrial fields which demand workforce by time-periods. Recently vocational training programs for New Growth Engine Industries and Green energy industries have been increased in accordance with transition of national strategic industries, while from 1970's to 1980's, a major part of vocational training programs was focused on developing the workforce in heavy chemical industry. It is also expected that the contents of vocational training will be consistently changed following future national strategic industries' trends.

The existing Korean vocational training was government-led, so either it impeded the efficiency of vocational training or the indigenous competitiveness of private training institutes has been hindered by it. To resolve these issues, recent trends have involved the privatization of the public vocational training institutes, and the relaxation of entry regulations of private vocational training institutes and facilities. In addition, the 'vocational training costs coupons (vouchers)' have been introduced for the trainees as consumers can complete the vocational training pro-

cess as they want. The existing state-centered aspects are therefore being converted to be more consumer-oriented (MOEL, 2010a). The public vocational training institutes and their efficiency will increase in the future, and the improvement of training information and method will be expected to activate good competition in the private vocational training market.

Training Programs

The vocational training program provides the trainees at vocational training institutes with the units of substantial vocational training. Recently, the vocational-training-related-policies business of government was conducted by the training subjects. The vocational training programs are largely classified as three types, namely training to unemployed, training to incumbent workers, and training to foster skill manpower (HRD-Net, 2008; Oh et al., 2005).

The employee training for improvement of incumbent workers' skill can be either directly or trustingly conducted by business proprietors. There are the 'business proprietors' support for technical education and training', 'support projects specifically for small and medium-sized enterprises', etc. Training for the unemployed is provided by the government to improve the employability or the basic skills of the unemployed. There is a type of training for the newly unemployed and another type for the already existing unemployed people. The training to foster manpower is conducted in the field of labor shortages through public training institutes or specified training institutes. There are trainings for craftsmen and technicians through Korea Polytechnic Colleges, priority job training through the Korea Chamber of Commerce & Industry Human Resource Development Center, and cultivation of training teachers through Korea University of Technology and Education (e-National index, 2011; Kim et al., 2009; MOEL, 2010a).

The existing vocational training program was entirely conducted in the form of a support for the training costs to the vocational training institutes. As a result, there have been problems such as a lack of results and the unimproved quality of the training process. Currently, however, the training programs that the consumers participate in complete the training process by selection such as the 'card system for employee's skill development' for incumbent workers, or the 'vocational skill development account system' for the unemployed people. These selection methods were introduced for availability of consumer-oriented training (MOEL, 2010a). It is positive in terms that it increases participation in training and enables customized training. In addition, training counselors were placed in Job Centers since 2009 to

lead customized training in the various supports (MOL, 2009), and the qualitative performance of vocational training is expected to be improved.

Training Teachers and Qualifications

Vocational skill development training teachers are certified trainers who teach necessary technology and functions of certain professions in the vocational skill development training institutes, corporations and associations. The cultivation of training teachers has regularly been conducted at the Korea University of Technology and Education since 1991, and about 4,000 training teachers are cultivated each year (e-National index, 2011). The existing cultivation of training teachers was accomplished through two-year professional courses, but the necessity of systemic cultivation of training teachers increased due to industrial advancement. It has very much developed since (Jeong, 2011; Oh et al., 2008).

Vocational teachers take charge of training courses of various industries, such as engineering, metallurgy, chemistry and ceramics. The qualification types of vocational training teachers are classified under 23 fields and 101 jobs and divided into three levels depending on career level, educational level and complement of training for promotion (Jung, 2011; Oh et al., 2008). Level three of vocational teacher qualification is provided to those who have finished the vocational teacher training course (a four-year degree course) in Korea University of Technology and Education. Then, it is possible to be promoted to level two or level one by either making training experiences or taking training programs.

On the other hand, there may be limitations; the level of social treatment to training teachers is lower than that of secondary vocational education teachers or junior college professors, and employment is unstable. Because the training process has been approved and the trained personnel are assigned through evaluations by training institutes every year, the employment training teachers can be decided depending on the results of the approved training. Treatment of training teachers or employment anxiety issues can have direct effects on the quality or the performance of training. Efforts for the improvement of the institutes and social awareness may be required in the future (Jeong, 2011; Kim et al., 2004; Oh et al., 2008).

Trainees and Job Placement

A trainee, who participates in vocational training, differs as much as a training course. The number of trainees emerging through the various vocational training

programs, such as training for the unemployed, employee training, training to foster skill manpower, and etc. –total 4,639,000 people during the year 2010. The minimum costs of living one day are offered to every trainee. Transportation costs and other living costs are additionally offered as well. The current trend is an increase in the scale of these trainees after state-led vocational training generally. Recent increase in trainees seems to be attributable to the increased number of employees participating in training. In specific, the number of the unemployed participating in training has decreased a bit since 2007 and the number of trainees for skilled manpower remains about the same while the number of employees participating in training is increasing. (MOL, 2009; MOEL, 2010a).

Regarding the effects of vocational training on trainees, it is reported that completing the course helped increase the employment rate of the unemployed and job performance of employees. Although there are different features in training programs, the employment rate for trainees remains high at 65 to 75%. But, despite the quantitative growth of vocational training, the rate of employees, who kept the same job continuously among all of the employees for trainees, is as low as 50%. The incumbent workers have been criticized for the ineffective ability to improve in the qualitative aspects or maintaining employment. Of course, Korea recently introduced the various training programs and made efforts to improve training through the ongoing training institute and evaluation of training programs. Therefore, it is noticeable that the efforts to improve the results of vocational training in terms of quality as well as quantitative will increase in training of personnel.

Conclusion and Implication

Conclusion

This paper aims to review the current situation and changes in VET to explore challenges and implications for future innovations. For this purpose, this paper respectively examined vocational education and training with regard to each of trend, performance, challenges and prospects. The main conclusions are the followings. VET system has been operated in two different systems – vocational education and vocational training. Vocational education system was based on a single ladder system which leads to primary, secondary and tertiary school; this education system benchmarked the American school system. The vocational training system depending on its purpose and subject has been operated by a variety of agents, institutes and facilities; this vocational training system benchmarked the German system. Mean-

while, in order to reflect the diverse needs of the industrial field and customers of education training, VET system sought to changes, such as the establishment of Meister school, by introducing the German vocational education model.

As the time changes, the central axis of vocational education is moving from the high school level towards the junior colleges. However, this is not because of the industrial requirements of a high level of workforce but the tendency of work force being highly educated due to the trend of discrimination based on the educational background and the preference of liberal arts education. In other words, companies require different academic levels according to job types but job seekers are mostly highly educated leading to job and skill mismatches. On the other hand, in recent years, the goal for training the workforce according to the level of schools is clarified, and the tailor-made training is operated to foster human resources who can be put directly into the field. In addition, there is the need to create a continuing education environment which allows the ongoing re-education which is required.

General vocational education had significance for all students on having the basic skills as a career man through the understanding of the world of work and their individual characteristics. It had also importance in terms of social dimension. However, despite its importance, the general professional education is recently classified as elective courses. Also, as all forms of education focus mainly on the preparation for college entrance exam, it actually is less operated than the actual necessity.

Secondary vocational education has taken a role of primary vocational education institutes in terms of fostering the workforce needed for the economic development in the past. Recently, however, the secondary education is recognized as the preliminary step for the entrance university and the demand for secondary vocational education is declining due to the wage differentials by educational background, and so on. In addition, the problem, that the secondary vocational education does not follow the industry's technology level and change, appeared. In recent years, in order to resolve these problems, the school has gained the autonomy to operate flexible school curricula. In addition, education which reflects the needs of industry is provided, and adjunct teachers are applied to ensure the understanding of the field. Nevertheless, the fundamental problem such as students' preference of entering a college and avoiding working in a small company still has not been resolved. Therefore, field-based education should be realized for secondary vocational education and career path after graduation should be suggested as well.

The higher vocational educations have contributed to the economic and social development with regard to supplying and developing the technical manpower that the industry needed in the 1970's and 1980's. However, in spite of recent quantitative expansion, the aspect of quality of education is problematic in the sense that

teachers and curriculum are outdated in comparison to the field of industry. In addition, the customers of higher vocational education are expanding from the past students of secondary education to the recent industry workers. On the other hand, in response to these changes, universities and governments make an effort to improve the quality to meet the industrial needs as well as operate the various entrance admissions to satisfy the demand of educational customers. Accordingly, higher vocational education institutes are required to operate flexibility to reflect the diverse needs of industry and customers.

Vocational training, since the 1960's, has been expanded as state-led training is promoted. It has been developed by continuously and sensitively responding to the ongoing industrial and professional needs. Recently, expanding the functions of manpower training through vocational education, the vocational training expands the continuing education features, focusing more on retraining or educating technique and vocation of employees or job seekers, rather than developing capabilities of the art/skill workforce. In particular, in addition to the national technical qualification system, the efforts to improve the quality of vocational training is being expanded, and in response to the development of National Skill Standards, the field-centered vocational training is expanding in conjunction with the industrial and vocational training, and qualification system. As such, vocational training has contributed to supply or retrain the national need of art/skill workforce very actively responding to the changes in the industry and society. However, with industry changing faster and becoming more knowledge-based, there are growing demands for high-grade workforce rather simple skill manpower. Accordingly, vocational training is required to improve responsiveness to meet the demands of industrial society by offering qualitatively improved training programs rather than simple training for skill delivery.

Training administration and policy, in the past, simply focused on technical and vocational education for job seeker and employees but, more recently, they looked at the vocational training as the part of a national employment policy in a more macroscopic perspective. National Skill Standards are developed for the purpose of tailor-made education and training necessary for the field of industry and, based on it the efficiency is increasing in conjunction with the field of industry, vocational training and qualifications systems. Vocational training institutes and facilities, avoiding the government-led training in the past and fostering civilian-led training, is expanding consumer-oriented training through investing in the industries of national economic growth such as green energy industry. These administrative and policy changes of vocational training respond appropriately to the era and they are required to develop and operate a wide variety of tailor-made vocational training to meet new customer demand for vocational training.

As the industry advances and systematic training of VET teachers is demanded, the training teachers have been raised by the shift from the past two-year training to a four-year college training course since the 1990's. Nevertheless, training teacher's social status and employment stability is low. Graduates of vocational training are expanding each year and the employment rate of unemployed graduates and graduates of training is high. The scope is expanding by developing various training programs and supporting the expense of livelihoods or transportation. Nevertheless, as the rate of longevity of graduates of training after getting their job remains by 50% and the training process may need to improve its quality. In other words, for advanced vocational, it is necessary to improve the treatment of training teachers as well as to give the quantitative and qualitative support for graduates of training.

Implication

First, vocational education and training should be able to contribute to continuously raising the labor force to meet the changing demands for man power. To satisfy the changing demands of the labor force in the labor market, this study first predicts not only the fields of work necessary in the future, the changing trends of the skills needed, and the demand for labor, but also identifies core competencies required by the profession. To this end, it is necessary to have active partnerships, exchange of information and collaborative action between relevant stakeholders, for example, industry, education and training institutes, governments, and research institutes. In addition, it is indispensable to have maintenance and financial support for this entire process to manage the overall dimension of the system.

Second, the field of vocational education and training should be strengthened. For effective vocational education and training, it is essential to enhance the consideration of the field. Thus, to reflect the individual employability and competitiveness of companies and countries, vocational education and training should meet the needs of the world of work and integrate work and learning. In particular, by using NCS that reflect industry demand, it is very important to strengthen the organic linkage of 'vocation-education training in the field of industry'. To do this, VET should be switched from knowledge-based to vocational-based and it should induce the industry to participate more actively in vocational education and training. In addition, it requires a variety of policy initiatives to strengthen VET teachers' expertise in the field.

Third, the linkages between vocational education and training should be strengthened. Recently, following the continuous changes of labor market and employment structure, it stands out the need of linkages between vocational edu-

cation and training. Therefore, in order to improve the quality and the efficiency of vocational education and training, it is necessary to expand human/material resources in the institute of vocational education and training and establish the foundation to maximize the cross-linking among VET institutes. With regard to human resources, it is required to cooperate mutually in terms of exchanges of teachers between vocational training institutes and vocational education institutes. As regards material resources, it needs to prepare the measures to purchase and use facilities and equipment in a joint manner. In addition, through the mediation of NCS, it is necessary to build up the foundation to do continuing education of their job in conjunction with the linkage between the content of vocational education and vocational training.

Fourth, it will be needed to build up the system which promotes social recognition of the results of the vocational education and training. In the consideration of continuing education-oriented society, the institutional device should be provided and activated to the end that the vocational ability is applied more usefully in the field, and receives a proper recognition of its value. To do this, disregarding the current system that the VET systems and qualifications systems are separated and each system derives their tasks individually, it is necessary to arrange an alternative to build up the vocational ability recognition system through the mutual linkage. For a detailed plan, by introducing the course completing qualification system, it is necessary to have methods of recognizing the results of VET as a visible tool.

Fifth, the establishment of international vocational education and training cooperation for mutual development will be needed. In the situation of internationalization and globalization being a common phenomenon, employment and education and training surpassed a single country-wide level of discussion. In particular, it will be necessary to analyze the German system, that is, industry directly involved in vocational education and training systems, as well as Western systems such as Finland and Sweden, that is, higher vocational education is valued as a successful example, and to make an effort in terms of their appropriate and proper application.

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Vocational Education and Training System (VET) in India

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Introduction

The Vocational Education and Training (VET) system is one of the formal institutional frameworks established in India for development of skilled man power. The Government of India has also perceived that VET offers various possibilities for intervention on the supply side of the labour market (Thakur, 1979, p. 343). However, the current system is not fully equipped to respond to the requirement of labour market (Beddie, 2009; World Bank, 2008). The issues related to current work force, its engagement and the level of unemployment in different sectors in the economy created the problems and potentials for managing the work force in the country (Bino et al., 2008; Srivastava, 2008; Government of India 2010a; Government of India, 2010b). Given the population growth rate, there is also still a large work-force engaged in the unorganized sector¹ with a lower level of literacy or required skills needed for any professional engagement (Government of India, 2010c). However, gradual changes in schools and also in higher education, show good signs of achievement, especially with a gradual decline in school dropouts (31% in 2001 to 3% in 2008 in the age group 6–14 years) (Dutt, 2010, p. 6). No doubt, such achievements will lead to better literacy level among young population. Nevertheless, the critical issue however is, at which level and to what extent such young population will be provided with skilled training and, subsequently, gainfully employed.

¹ The term ‘workforce in unorganized sector’ is referred to those who are not able to organize themselves in pursuit of their common interest due to casual nature of employment, ignorance and illiteracy etc. (see Government of India, 2010f, p. 77).

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Moreover, the National Council on Skill Development has also endorsed a vision to educate about 500 million people before 2022 through various vocational and other skill development mechanisms of different Ministries both at the National and the State levels. At present, however, only about 2% of the workforce has had any kind of such skill training as defined by the National Council on Skill Development (Government of India, 2010b, p. 1).

This paper attempts to analyze the current developments in the VET system in India and the strategies to be followed for further improvement of the system.

Vocational Education at Schools

In India, VET is carried out at two levels which are handled separately. At the school level, vocational schools are regulated by the Ministry of Human Resource Development, Government of India. The students of 11th and 12th grade undertake vocational education at schools. At higher educational levels, the Vocational Training Institutes (VTIs) conduct trainings, run through government sponsorships by Industrial Training Institutes (ITIs) and by private institutions through Industrial Training Centres (ITC). Thus vocational trainings are offered through two separate institutes namely Industrial Training Institute (ITI) and Industrial Training Centre (ITC) which are regulated by the Ministry of Labour and Employment.

Many educational reforms have been introduced since Indian independence in 1947, based on recommendations of different committees appointed by the Government of India. At the time of independence, the University Grants Commission, headed by the former President of India, Dr. S. Radhakrishnan, remarked vocational education as 'less exacting preparation of students who could not be trained for any professionalism' (National Council of Educational Research and Training, 2007). The Commission also felt that though many students could not achieve higher level of education, it is essential that these students should also be provided with job oriented skilled training. Later, Kothari Commission (1964–1966) (Debroy, 2009) had the view that by providing vocational education to children at schools, more job competencies could be created. The Commission also had the view that 25% of secondary school students could be diverted to vocational stream. Later, during 1976–1977, under the program of 'vocalization of higher secondary education in schools', a formal Vocational Education Program (VEP) was launched. Subsequently, Kulandaiswamy Committee (1985) made further reinforcement in the educational system. This Committee after reviewing VEP had suggested promoting a centrally sponsored scheme under Ministry of Human

Resource Development. The National Policy on Education (1986) which, followed by an Amendment in 1992, also further emphasized the importance of vocational education at school levels. The decision was to take vocational education as a distinct stream and to consider it as a centrally sponsored scheme. Based on the needs, the central government also came forward to provide financial assistance to individual federal states for setting up administrative structure, area, vocational surveys, preparation of curriculum etc. (Government of India, 2010d, p. 81) in order to encourage vocational education at school levels.

Growth of Vocational Schools and the Missing Links

Not much takers are there despite such developments in vocational education system at the school level. Unfortunately, the progress in establishment of vocational schools and subsequent enrolment is rather slow. Currently there are only 9,619 vocational schools against 6,156 schools in the beginning of this century (Government of India, 2010e) compared to 171,862 secondary schools. The current enrolment of school children in these vocational schools is only about one million against 16 million children who managed to enrol at higher secondary level. Few critical remarks were however made in various case studies in the functioning of such vocational schools in the country. The major limitations seen in the system are that the academic stream (general education) seems to promise a higher employability than the vocational stream. In many countries, including India, the vocational schools create a sense of second-class citizenship (Foster, 1965, pp. 142–66; Blaug, 1973).

Slow achievements in the country are also attributed to many other social and economic factors. Negative attitudes to manual work (blue-collar jobs), perception of the ‘vocational education system only for the poor’ and also for ‘educationally backward’ (poor performers) are few other added reasons for slow achievements. Besides, there is also slowing down of growth in agricultural and industrial sector in the country as against relatively high growth in the service sector². These growth imbalances, among the three major sectors, have also created less demand for trades related to agriculture and industry sectors. This often put pressures in modifying the trade courses to students with time lag. From an economic point of view, provision of vocational education is construed costlier than general education (Thakur, 1979, pp. 343–56). With regard to financial support from the central government, the

² Among the different sectors in the economy, the rate of growth of major sectors during 2008–2009 at factor cost (2004–2005 prices) were: Agriculture 1.6%, Manufacturing 3.2%, Transport and other services 11.6% (see Government of India, 2010b, p. 3)

extent of public expenditure on education was less than 14% (2008–2009) and the expenditure on education to GDP was only 3.78% during the above period. About 52% of such expenditure on education was incurred for provision of elementary education and about 29% for secondary education including vocational education. From these low spending, the allotment to vocational education is still rather very low (Debroy, 2009). This could also jeopardize the enrolment in vocational schools leading to poor capacity utilization of the already existing infrastructure.

Thus, contrary to the overall perception of the government to divert about 25% to vocational stream, in terms of overall enrolment, beginning from school class I, hardly one per cent of the students enrolled had entered into vocational stream at schools (World Bank, 2008). Nevertheless, because of inherently logical and simplistic appeal, vocationalism will be for years to come and more countries will attempt to tune their formal education system to world of work (Psacharopoulos, 1987, pp. 187–211).

Vocational Training in a Formal Way

ITIs and ITCs provide vocational training under the centrally administered Craftsmen Training Scheme (CTS). These institutes however develop the manpower as semi-skilled workers. After successful completion under the CTS, the graduates could become skilled worker through Apprenticeship Training Scheme (ATS).

CTS was first initiated by Directorate General of Employment and Training (DGE&T) under Ministry of Labour and Employment in 1950, by establishing 50 ITIs. Later during 1980's several private ITIs were established. During the year 1987, there were only 1887 institutes. It was during this period that the private training institutes were distinguished from government training institutes by renaming them as 'Industrial Training Centers' (ITCs). Since during last two decades, the growth of ITIs had been faster and at the end of the year, 2009 there were 7,605 ITIs/ITCs (2,076 in government and 5,529 in private sector) with a seating capacity of 1.063 million. Currently (April 2010), there are 8,039 (2,133 government owned and 5,906 private) ITIs/ITCs with a seating capacity of 1.11 million.

Added to this, the National Apprenticeship Scheme was launched initially on voluntary basis during 1959. Later an Apprentices Act 1961 was passed and came into force on 1 March 1962. In the beginning, this Act envisaged training of only trade apprentices. In 1973, through an Amendment in the Act, the training of graduates and diploma holders in Engineering and Technology as 'Graduate and Technician Apprentices' was introduced. The Apprentices Act was further amended

Table 1 Seating capacity and utilization in skill development (Source: Government of India (2010e); NSDC (n. d., p. 21))

Skill Training	Seating capacity	Utilized	Utilization (%)
ITI/ITC	1,115,628	954,000	85.51
Trade Apprentices	278,123	195,703	70.36
Graduate	30,737	24,414	79.43
Technician	40,802	22,591	55.37
Technician (Vocational)	25,130	10,986	43.72
Total	1,490,420	1,207,694	81.03

in 1986, so as to train students passing out of the (10+2) vocational stream as Technician (Vocational) Apprentices.

Thus Apprenticeship Training Scheme (ATS) in the country comprises of (a) Trade Apprenticeship Training (b) Graduate (c) Technician and (d) Technician (Vocational). Among these training schemes, especially under Trade Apprenticeship Training, 188 trades in 35 trade groups have been designated. In other schemes namely Graduate, Technical and Technician (Vocational) Scheme, 122 subject fields have been designated.

The issues related to functioning of these formal training institutions at higher level also need critical analysis. Though major interventions are made to strengthen the institutions, especially the public funded institutes, these measures are still inadequate in terms of meeting the overall vision of creating a huge skilled manpower in the country. The seating capacity and the percentage of utilization of such capacities are shown in the Table 1.

The means of providing semi-skilled and skilled training through various institutes, their seating capacity and the percentage of utilization will clearly indicate that there is still under utilization of the facilities already created and existing. There is a need to improve the utilization level and also to create adequate demand. It is also clear that with the existing capacity of training of about 1.4 million, there is a long way to go to meet the target.

Skill Development in an Informal Way

Unfortunately majority of the work force is primarily engaged in the informal or unorganized sector while speaking of developing skilled manpower in the coun-

try. This sector is employing about 420 million out of the total workforce of 450 million. Such unskilled employees in the country are properly registered, but not adequately protected from major social security benefits. This situation not only indicates the seriousness of the issue but also the need for skilled development even in the informal sector. The problems of providing skill to such workforce are multi-dimensional. To cater the needs of developing the skills among the unorganized, many initiatives are taken by the various ministries of the government. Special programs like Modular Employability Skill training (MES), National Institute of Open Schooling (NIOS), encouraging new training organizations like Voluntary Training Providers (VTP) to train the unskilled manpower etc. However, these measures could impact or cater to small number of workforce considering the huge workforce under the informal sector. Besides, there is a need to evolve more research agenda and also to evaluate such types of initiatives taken elsewhere. Such efforts will also help in focusing the unorganized sector in a more effective way. Meanwhile, the gradual means of providing skills to the upcoming young work force will no doubt reduce the huge burden of imparting skills to such unorganized sectors and in long term will convert every area into organized sector.

The Needed Strategy

Given the institutional framework for VET in India, the question immediately arises now is what strategies or changes need to be followed? To realize the need to merge the vocational schools and training institutes, the Ministry of Human Resource Development and Ministry of Labour and Employment need to work together. Besides, International organizations like UNESCO and World Bank recommended provision of vocational education should be made an integral part of general education. Such blending might help in preparing the students for job orientation, acts as an instrument to reduce the mismatch between education and employment and also remove the low recognition in the society at large. Countries like Germany, Switzerland, USA, New Zealand, Thailand, Indonesia and Japan have years of experiences in fine tuning the VET system and thus have become industrially strong. One of the major reasons for the success in those countries is mainly due to the integration and blending of curriculum with the industrial and trade requirements. The societal partners also play a major role in promoting the VET system in these countries, though the level of participation and their commitment varies from country to country. India has to formulate its own policy agenda and strategies to meet the skill development among its population. Some of the areas the policy makers have

to bestow attention for developing skilled man power in the country are through encouraging and popularizing vocational education among young people with adequate support to provide gainful employment, promoting strong mutual benefits between societal partners and training providers, more support from government in establishing full fledged and well equipped training institutes and capacity building for the vocational stream trainers to update knowledge based on the trends in trade and industrial developments.

Conclusion

India is recognized as one of the oldest and largest education systems in the world. Although the country had inherited a philosophy arisen out of the Upanishad³ it is, even now experiencing a large diversity in educational structure coupled with problems of low literacy levels. Developing skilled man power is one of the long-term agenda for the country. Such an ambitious programme to be realized needs interventions at various levels. Though at National level university education is given more priority, vocational education and skill development need to be addressed more seriously considering the vast number of young work force added to the population every year. The country need to tap such human resource to supply the quality and skilled man power not only to its own economy but also for abroad.

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³ Upanishads deal with fundamental questions about existence, life, creation, death etc. (see Prasad, N. d.).

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India's National Skills Development Policy and Implications for TVET and Lifelong Learning

Madhu Singh

Introduction

The aim of this paper is to highlight policies and reforms supporting technical and vocational education and training (TVET) in India.¹ Five questions are addressed in this paper: (1) What challenges are being addressed by India's recently (2009) adopted National Skills Development Policy? (2) What are the key drivers of the National Qualifications Framework developments, their distinguishing features, and how is their implementation going to be supported by reforms in the TVET system? (3) How are the various stakeholders involved in the planning and implementation process? (4) What are the different training pathways within the TVET system? (5) How is the Indian TVET system dealing with issues of providing equal access to the marginalized? The paper concludes with a discussion on issues and themes concerning India's skills development policy and TVET reforms.

The TVET Context in India

The Technical and Vocational Education and Training (TVET) system is a three tier system developing human resources: (1) certificate-level for higher secondary students in the vocational stream and training for crafts in Industrial Training Institutes (ITI) as well as through formal apprenticeships as semi-skilled and skilled workers; (2) diploma-level graduates for people trained in the Polytechnics and technicians

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and supervisors; (3) graduate and post-graduate level specialists (e.g. engineering colleges trained as engineers and technologists) (CABE, 2011).

There are 17 Ministries² which have formal responsibility for technical training in their specialist fields and deliver or fund some forms of formal and/or informal training TVET. However, the two main Ministries for TVET are the Ministry of the Human Resource Development (MHRD) and the Ministry of Labour and Employment (MoLE). The MHRD is responsible for vocational programmes in secondary schools, polytechnics and colleges of Engineering; the MoLE is responsible for public ITIs and private ITIs called Industrial Training Centres (ITCs) and the system of Modular Employability Skills (MES).

India is a federal country with 28 states and seven Union Territories. India has aspired to be an important source of talent for global and national businesses. In her paper 'National Strategies for Vocational Education and Lifelong Learning', Sudha Pillai (2009), Secretary, Member Planning Commission stated that while India is a storehouse of a vast pool of skilled manpower, India's huge challenge is to ensure that its manpower possesses skills appropriate to the needs of both its internal economy and the global economy. Citing the forecast made by the US Census Bureau and the Boston Consulting Group, she said that while the whole world will face a deficit of skilled manpower by 2020, India will have a surplus of 47 million youth who will have the potential to become self-sufficient and to become a major source of skilled manpower at international standards (*ibid.*).

However, despite these optimistic forecasts, there is general awareness among policy makers about the inadequacy of the current availability of facilities for higher education as well as vocational education. Despite having the largest technical manpower in the world, compared to its population it is not significant. There is an over emphasis on general education, with vocational education and training at the receiving end. The number of engineers graduating is more than the diploma holders; this is creating an imbalance as more workforces are required at the lower level (Goel, 2011).

According to government sources, the scope for improvement is great. The shortfall of technical manpower is being addressed now, with a greater thrust on vocationalisation of secondary education, by opening up more training facilities (polytechnics and ITIs) for skills training of the middle-level and lower-level workforces, as well as by imparting vocational courses for marginalised sections of society (*ibid.*).

² These include Ministries in the following fields: Agriculture, Health and Family Welfare; Medium Small and Micro Enterprises; Tourism, Urban Development and Poverty Alleviation; Food Processing; Health and Family Welfare; Social Justice and Empowerment; Textiles; Tribal Affairs; Women and Child Development, so mention some.

The Changing Skills Development Logic and Paradigm as Presented in the India's National Skill Development Policy (NSDP)

In February 2009, India adopted a National Skill Development Policy (NSDP) which aims to guide the skills development strategies and initiatives of all stakeholders and which has set the ambitious target of skilling 500 million people by 2022 (MoLE, 2009). The Government of India is seeking to impart vocational skills to over 200 million students who failed to get higher education by 2010 by creating pathways to post-secondary and higher education; it also aims to secure job opportunities of those 150 million students who will not have access to colleges by 2020. Currently only 14 million or 12.4% of 220 million school students finally reach colleges, but the government is planning to bring this number up to 40 million or 30% by 2020. It is also targeting skills development to all those in the labour force, including those entering the labour market for the first time (12.8 million annually); those employed in the organised sector (26.0 million); and those working in the unorganised sector (421 million) in 2004–2005. The current capacity of the skills development programmes is merely 3.1 million (*ibid.*).

According to the NSDP, its overarching objective is to support 'inclusive growth' (*ibid.*, p. 8) i. e., strengthening competitiveness, and supporting the process of economic growth, as well as enhancing an individual's employability (both wage and self-employment), improving productivity, and raising living standards of women and men (*ibid.*). Furthermore it aims to increase the capacity and capability of the system to ensure equitable access to all; promote lifelong learning, maintain quality and relevance according to the changing requirements (*ibid.*).

The challenges of skills development are huge and the government is aware of these challenges. Only 10% of the Indian labour force – has acquired vocational skills. Out of this, 8% acquires its vocational skills informally. Whereas the percentages of the labour force that has acquired vocational skills in industrialised countries are above 60. Furthermore it is difficult for persons with informally acquired skills to transfer from non-formal, informal and work-based learning environments to formal programmes. Currently there are limited mechanisms for recognizing knowledge and skills acquired outside formal institutional settings. The unorganised sector, both rural and urban, employs up to 94% of the national workforce. But most of the training programmes cater to the organised sector (*ibid.*).

The NSDP policy hopes to accomplish the above mentioned targets through high levels of inclusion, accountability and coherence. India's operational strategies are to use techniques such as the National Vocational Qualifications Framework (NVQF) based on openness and flexibility which will permit people to accumulate

their knowledge and skills and convert them through testing and certification to higher diplomas and degrees (ibid.).

Involvement of Stakeholders in Skills Development and the Establishment of Qualification Frameworks

Skills development has received the highest priority at the highest level of the Government. In May 2008, the following apex institutions were created under co-ordinated action for skills development: The National Council on Skill Development (NCSD), under the chairmanship of Prime Minister, as an apex institution for policy direction and review; the National Skill Development Co-ordination Board, under the chairmanship of Deputy Chairman Planning Commission, to plan strategies for implementation decision of the National Council. The National Skill Development Corporation (NSDC) is a good example of a public-private-partnership and has possibilities to try out new ways of training people. Other innovations are the Sector Skill Councils that focuses on the skills needed in special industries. The Planning Commission of the Government of India co-ordinates the official policy.

The idea of introducing the National Vocational Qualifications Framework (NVQF) in India is widely supported among stakeholders and the relevant Ministries of the federal states. The NVQF supported by the Prime Minister's Council on Skills Development was an important element in the preparation of the NSDP (MoLE and ILO, 2008). According to the NSDP, the NVQF will be established 'to stimulate and support reforms in skills development and to facilitate nationally standardized and acceptable, international comparability of qualifications' (MoLE, 2009, p. 25). It will operate largely autonomously with reference to the particular context of the vocational education and training system, but it would be part of an overall NQF and will conform to its broader guidelines and structure (MoLE, 2009).

The NVQF became one of the key elements of the World Bank funded India Vocational Training Improvement Project (World Bank, 2008). A key driver of the NVQF was the need to integrate the range of qualifications currently offered by the different agencies and states in India.

However, in the meantime a process for establishing the NVEQF was initiated by the Ministry of Human Resource Development (MHRD) at the 57th session of the Central Advisory Board Of Education (CABE) Committee meeting held on 19th June, 2010 in New Delhi. It highlighted the need for a National Vocational Educa-

tion Qualifications Framework (NVEQF) and not a NVQF (MHRD, 2011). The aim is to provide 'a common reference framework for linking various vocational qualifications and setting common principles and guidelines for a nationally recognized qualifications system and standards (IAMR, 2011).

To deliberate upon the various issues related to implementation of the NVEQF the MHRD organized two meetings with State Education Ministers on 14 December 2010 and 20 January 2011. At the January 2011 meeting there was unanimity amongst States for the NVEQF. A centrally sponsored scheme of vocational education in the higher secondary stage would complement these efforts. At the 10 January 2011 meeting with State Ministers, it was also unanimously resolved to constitute an Inter-Ministerial Group which would also include representatives of State Governments to develop guidelines for such a National Framework and to develop a broad consensus on the contours of the NVEQF.

At the recent 58th session of the CABE, the MHRD made it clear that the MHRD was involved in preparing the NVEQF and not the NVQF (MHRD, 2011). The Inter-Ministerial Group constituted by the MHRD is therefore separate from the one that is already formed under the MoLE to prepare the NVQF.

In the meantime the Union Minister of HRD has presided over two round tables with representatives of the Industry. On 6th December 2010, the Union Minister, Mr. Sibal presided over a round table organized by the All India Council for Technical Education (AICTE) for the development of a NVEQF. The first round table was with regard to the automobile sector (6 December 2010) (Press Information of India, 2010); the second one with regard to the IT, ITES and Telecom Industry. More round tables are proposed to be organised in order to address a gamut of vocations. Core groups have been constituted for the preparation of the curriculum for the automobile, for the telecom and for the IT sector. These groups are to submit their recommendations to the HRD Ministry. The Union HRD Minister emphasised the need to create skills in the manufacturing sector and said that it was unsustainable for a country such as India with a population crossing 1.2 billion to have 56% of its economy and growth coming from the service sector (*ibid.*).

In addition to Secretaries and senior officers from various Ministries and the State Governments, other stakeholders involved in the development of the NVEQF are: Heads of University Grants Commission; the All India Council for Technical Education, (AICTE), Indira Gandhi National Open University (IGNOU), National Council of Educational Research and Training (NCERT), National University of Educational Planning and Administration (NUEPA), Central Board of Secondary Education (CBSE) and National Indian Open School (NIOS) and representatives from National Skill Development Corporation responsible for constituting Sector Skills Councils, and industry associations such as the Associated Chamber of Com-

merce and Industry of India. (ASSOCHAM), Chambers of Indian Industry (CII) and Federation of Indian Chambers of Commerce and Industry (FICCI). A developing social partnership is emerging as the trade unions recognise the importance of the NVEQF and the Chambers of Commerce sensitise their entrepreneurs of the importance of certificate skills for their workers (Press Information Bureau, 2010).

Key Features and Policy Objectives of the NVQF and the NVEQF

The National Vocational Qualifications Framework

The NSDP (MoLE, 2009) identifies NVQF as the main instrument for linking various education and training pathways. As already mentioned, the NVQF is one of the key outcomes of the World Bank funded India Vocational Training Improvement Project (World Bank, 2008). Comyn (2009) describing the key distinguishing features of the NVQF are the 24 distinct vocational clusters which align with major industrial sector. As in the Australian TVET system, the framework has included 'Statement of Attainments' and 'Training Packages'. For each of the 24 clusters, vocational qualifications relevant to each sector will be developed. The qualifications in the TVET sector will include four competency certificates and a further five credentials from Diploma to Doctorate available from polytechnics and universities within a 'Higher Technical Education System' (World Bank, 2008). With the announcement of the NVEQF, it is unclear whether MoLE and NVQF are going ahead with the project and whether on going implementation assistance will be available from donors for the NVQF.

The National Vocational Education Qualifications Framework (NVEQF) – Policy Objectives

The overall features of the NVEQF are similar to the features identified for the NVQF as described in the NSDP. The NVEQF is 'a unified system of national qualifications covering schools, vocational education and training institutions as well as the higher education sector (MHRD, 2011) (see Fig. 1). It integrates education and training systems encouraging lifelong and continuing learning' (ibid., Agenda-III).

Thus the NVEQF reflects features that are common to other NQFs abroad. Thus: 'Besides being designed to provide nationally recognised, consistent standards and

qualifications, the NVEQF 'will provide recognition and credit for all learning of knowledge and skills; facilitate mobility and progression within education; training and career paths and facilitate validation of non-formal and informal learning as recognition of prior learning; thus facilitating lifelong learning. It also seeks to promote international recognition of qualification offered in the country' (ibid.).

Similar to the NVQF, the key driver of the NVEQF is the need to integrate the range of qualifications that are currently being provided through TVET programmes run by more than 17 Ministries (MHRD, 2011). A further key objective is to bring out necessary flexibility in the offering of vocational courses and development of 'modular competency-based curriculum' in collaboration with the industry to suit the need so both employer (industry) and youth.

However, in contrast to the NVQF, the focus of NVEQF is on vocationalising secondary. There are 28 million youth are being added every year to the youth population and that only about 2.5 million vocational training seats are available in the country (ibid.).

The close cooperation with the industry is also one of the thrusts of the NVEQF. The MHRD is involved in consultations with representatives from the industry in the preparation of the NVEQF and to evolve a strategy to compensate for the acute shortage of labour at Level 2 and Level 3 (Press Information of India, 2010).

Level Descriptors and the Use of Learning Outcomes

The NVEQF (IAMR, 2011) will have ten national qualification levels – from secondary level to the Ph. D level, interweaving academic education, vocational education and skills training. Vocational education courses training will have 10-stage certificate-based vocational education levels with the first four between the 8th and 12th class and the remaining above that. The parameters that are considered for description of levels include the following: (i) the process that a qualification holder is required to carry out; (ii) the competences, the knowledge, skills and ability, that a person should possess, and (iii) the responsibility that a person should own at the NVEQ level.

The Final Draft of the NVEQF also acknowledges that steps will be taken to develop learning outcomes, which describe what people will be able to do at the end of a learning programme. These outcomes, the Final Draft says, need to be related to national Occupation Standards (NOS), which will need to come from private sector employers, as they cannot be pre-determined by instructors employed by the government or education and training institutions (see Fig. 1).

While the emphasis will be on the use of learning outcomes, designers of the NVEQF are not neglecting the input orientation and the necessity of revamping the curriculum. According to the Working Document of the final draft of NVEQF,

General Education Qualifications School Sector	Vocational Secondary Education	Vocational Training (ITI)	Technical education (Polytechnic)	Higher Education
Certification of Senior Secondary Education	Certificate 2 Certificate 1	Trade- Certificate 2 Trade- Certificate 1	Advanced- Diploma*** Diploma** Certificate 2 Certificate 1	Doctorate M. Phil. Masters B.A
Certificate of Secondary Education		Bridge Course Certificate in Craftsman Training#		

Figure 1 The Proposed Indian National Vocational Education Qualifications Framework; ** Third year of present polytechnic Diploma; *** Present polytechnic Diploma where entry is after Class XII; # Entry is after class 8 (Source: MHRD (2011))

2011, 'the reconstruction of the curriculum for schooling and higher education will be essential in order to provide necessary flexibility and to get rid of redundant teaching-learning practices ...' (IAMR, 2011). Ministries, Departments and Institutions that would have the responsibility of working out the required curricula changes have also been identified in the Final Draft of the NVEQF (2011). The Final Draft (IAMR, 2011) has also identified the various categories of Education and Training Providers.

Comparisons between the NVEQF and the NVQF

While it still not clear whether NVEQF and NVQF are going to be established as two separate frameworks (see Fig. 2), already certain differences in thrust and in

Level	General Education Qualifications	Registered National Vocational Education Qualifications	Proposed Certificate Awarding Bodies
10	Doctorates	National Competence Certificate 8	Universities
9	Masters	National Competence Certificate 7	Colleges and Universities
8	Post Graduate Certificates, Post Graduate Diplomas and Bachelor Degree (Honours)	National Competence Certificate 6	Jointly by Colleges and Universities and NSDC
7	Bachelor Degree and Graduate Diplomas	National Competence Certificate 5	Jointly by Colleges and Universities and NSDC
6	Graduate Certificates/Advanced Diplomas	National Competence Certificate 4	Jointly by Colleges and Universities and NSDC
5	Diplomas	National Competence Certificate 3	Jointly by Polytechnics/Colleges/Universities and NSDC
4	Class XII (General Academic/Vocational Certificate)	National Competence Certificate 2	Jointly CBSE/CISCE/State Boards and NSDC
3	Class XI (Vocational)	National Competence Certificate 1	Jointly CBSE/CISCE/State Boards and NSDC
2	Class X (Pre-vocational)	National Certificate for Work Preparation 2 (NCWP-2)	Jointly School/ITI/VTPs and NSDC
1	Class IX (Pre-vocational)	National Certificate for Work Preparation 1 (NCWP-1)	Jointly School/ITI/VTPs NSDC

Figure 2 Qualifications by levels across the NVEQF (Source: MHRD (2011))

the target groups are emerging between the two. While the focus of the NVEQF is on facilitating the progression from vocational secondary to higher education and providing a basis for comparability of general educational and vocational qualification, the NVQF will focus on the organised and the unorganised sectors, integrating formal training and non-formal training, notably learning in the workplace, and offering vertical mobility from vocational to academic learning. It will promote life-long learning through improved skills recognition system, and recognition of prior learning – formal, non-formal and informal (MoLE, 2009).

Education and Training Pathways in TVET

With the development of the NSDP and the contours of the NVEQF (IAMR, 2011), India recognises the importance of better qualifications and competences offering possibilities for progression and mobility. However, for this policy and the frameworks to be implemented there needs to be a good understanding of the opportunities for employment and a strong emphasis on quality provision and availability of different education and training pathways, including adult education and training that are interwoven into the qualification framework. This section looks at some evidences of the efficiency and the effectiveness of some of the education and training programmes at various levels of the TVET system, addressing the question of how people are actually progressing through the TVET system seen from a holistic perspective of a lifelong learning system from literacy and adult basic education and training to higher education.

Vocational Secondary and Post-secondary Education

Vocationalisation of Secondary Education

Vocational Education in India referred to as VEP (Vocational Education Programme) as distinct from Vocational training under the MoLE, is under the aegis of the MHRD. With the NVEQF the focus will be on the opportunities available to the students who cannot join colleges and universities and those who are not academically oriented. Students from class VIII onwards can take up other vocational subjects like carpentry, paramedical, hospitality, construction and so on. The 10-stage certificate based vocational education will be one whereby a student can complete four levels till class 12 (Senior Secondary) and the remaining six levels after class 12 (see Fig. 3). The system will be flexible, and the students after acquir-

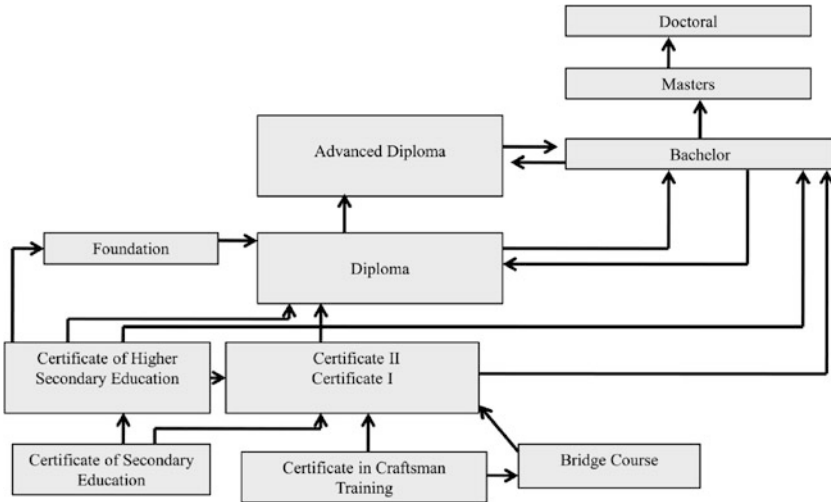


Figure 3 Qualifications by levels across the NVEQF (Source: MHRD (2011))

ing vocational secondary school certificates can come back into academic studies at the undergraduate levels. Currently, only 8% of all senior secondary school level in India imparts vocational education (IAMR, 2010). The 10-stage certificate based vocational education is expected to be an alternative to engineering and medical streams. This will not only create numerous jobs but also boost the industrial sectors as a whole. Sector Skills Councils and Industry are expected to collaborate in the development of quality standards, competences, model curricula, assessment standards and testing procedures, and providing required hardware and suitable trainers to teach the aspirants of vocational secondary stream (MHRD, 2011).

The efforts to establish a NVEQF are being complemented by the Action Plan for Vocational Education (see Planning Commission, 2008), which includes expansion of vocational education from 9,583 senior secondary schools to 20,000 schools.

However, as the IAMR Report (2010) points out three years since the Action Plan started (April 2008), there has been 'little or no forward movement on the expansion of Vocational Education to cover 20,000 schools' (p. 5). Not more than 8% of all Senior Secondary Schools in the country impart vocational education. MHRD's original intention to place 25% of all Grade 11–12 students into vocational courses by the year 2000 has not been implemented. Less than 3% are currently registered for vocational courses (World Bank, 2006).

The links between work education, and pre-vocational education and vocational education, as proposed the National Curriculum Framework for School Education (NCERT, 2005) are largely unimplemented. There are, however, some successful vocational secondary programmes run by the Central Board of Secondary Education (CBSE) that has ventured to offer 28 packages comprising 85 subjects in the vocational stream, such as Health Care Science, Auxiliary Nursing and Midwifery courses and Financial Market Management.

There is strong support from the Union Minister of Human Resource Development for vocationalising secondary education. According to the Union Minister, the NVEQF with an emphasis on vocational secondary pathways will simultaneously increase retention in school and with that, improve the implementation of the Right to Education Act.

The curriculum of vocational framework is expected to provide a mix of technical skill with managerial skills for vertical integration in the industry and there should be regular refresher courses to update technical skills (Odisha HRD, 2011).

Post-secondary Education

The focus of the NVEQF is also on colleges and universities that should enable a seamless transition of students from the senior secondary level to the undergraduate level (see Fig. 3). Of the approximately 220 million children that go to school, only 14 million reach college. Mr Sibal, the Union Minister for Human Resource Development India pointed out that India is far behind the developed nations, where the percentages are pegged at round 80 as against the global average of 23% (Odisha HRD, 2011). At present only 12% of students between 18 to 24 years are enrolled in higher education and the Union Minister hopes that by 2020, it will be 30% (Indiainfoline, 2011; Indian Express, 2011).

But the connection between vocational secondary education and higher education can only happen when students entering colleges have a minimum level of knowledge and secondary school is supposed to provide this. Because this is not happening, today, only 15% of India's graduates are employable.

With the announcement of the NVEQF to cater to millions of students who cannot, or do not, take up higher education, there will be an opportunity for students of non-formal education to enter formal higher education without spending years trying to catch-up. In a press communication (Hindustan Times, 2011) entitled 'Skills under graduation, do post-graduation with diploma from polytechnic', the report, citing a source, says that 'at present, the non-formal and formal systems of education work parallel to each other with no intersection, meaning that students of one system cannot shift mid-way to the other. The NVEQF is expected to change that' (Hindustan Times, 2011).

Up to now polytechnics are meant to provide skills after class 10, and consist of diploma, post-diploma and advanced diploma programmes. It is proposed to upgrade infrastructure of existing diploma level, public funded Polytechnics. The construction of women hostels in 500 Polytechnics are planned (MHRD, 2011)

With the proposed NVEQF there is a trend for private sector to enter into agreements with State governments to set up Vocational Education Universities (ICBSE news, 2011), comprising community colleges across the state, which will confer credits recognised by degree programmes (ibid.). The Deputy Vice-chancellor of the Indira Gandhi Open University (IGNOU), citing international experience, stated that community colleges improve accessibility, increase inclusiveness, lower costs and create vertical mobility. Community colleges offer what it calls an 'associate degree', rather than a diploma, which will confer credits recognised by degree programmes. Usually after a student passes a diploma programme, she/he typically has to start afresh if he wants to pursue a degree. On the other hand, a student passing out of a community college, for example as an accounting technician course, will be able to join a Bachelor of Commerce (B.Com) programme in the third year of the University studies (L. Pillai, 2009). The Indira Gandhi National Open University (IGNOU) has already enrolled over 300,0000 students in about 600 community colleges in the last three years, according to the Vice Chancellor V.N. Rajasekharan Pillai. The IGNOU community colleges across the country offer vocational education, skill development and work integrated learning schemes. These colleges provide a supplementary route to higher education through an appropriate mix of skills and academic knowledge. The Pondicherry Central University has started the first community college in the country and is now augmenting the community colleges by appointing faculty and creating other facilities, said the Deputy Vice-Chancellor. 'In Tamil Nadu, all state universities have recently decided to start 10 community colleges each', he added. As per IGNOU, community colleges are an alternative system of education which aims to empower individuals through appropriate skill development leading to gainful employment in collaboration with the local industry and community. They generally have a two-year curriculum that either leads to an associate degree for transfer to an undergraduate college or to the students direct entry into any occupation or trade (ICBSE news, 2011).

In order to ensure the compatibility between academic courses and work elements, the University Grants Commission (UGC) created a task force in 2006 to standardize knowledge and skills imparted by educational institutions and industrial training programmes to formulate the National Qualifications Framework. The UGC is yet to release the document pertaining to this (Baradol, 2009). It is aware that because qualifications and skills are changing, and the nature of jobs is also changing, and it may not be possible to remain with a particular degree throughout

life. Therefore the UGC aims to introduce practical components in education so that the students benefit. Taking into account skills acquired on the job, an industry worker should have the possibility of getting additional academic qualifications and obtain a degree. Similarly, students who have had some components of an academic course could gain practical skills that would improve their qualifications (The Hindu, 2006).

These are important changes in Indian education system that will have wide-ranging significance with respect to vocationalising post-secondary education in India. The Indira Gandhi Open University (IGNOU), at present offers 338 programmes of study through over 3,500 courses to cumulative student strength of over 300,000 students (MHRD, 2011).

Vocational Training

Vocational training is the responsibility of the MoLE, which has been in the forefront of developing courses for school leavers through a network of more than 5,000 Industrial Training Institutes (ITIs) located all over the country. The courses prepare trainees for the employment as semi-skilled and skilled workers in the world of work or to go or self-employment. Apprenticeship training is offered to school leavers and the ITI graduates in 153 designated trades. 2.54 million Seats are available so far. The National Trade Certificate (NTC) and the national Apprenticeship Certificate (NAC) are recognized qualifications for recruitment in relevant post/services under the Central Government (DGE&T, 2008). The Apprenticeship Training Scheme (ATS) provides training to a semi-skilled worker who is 8–10 standard pass and whose minimum age is 14 years (IAMR, 2010).

Within the context of the NVQF, at the level of ITIs, routes to skills progression are possible for ITI graduates, who may enter as 'Trade Apprentices' and qualify as skilled workers. There is provision for vertical mobility for ITI graduates – they can make a lateral entry in the second year in diploma courses offered in polytechnics. A polytechnic graduate may enter as 'Technician Apprentices' under the Apprenticeship Training Scheme (DGE&T, 2008).

It is hoped that an NVQF will improve the pathways and progression pathways between formal TVET programmes in schools and ITIs, UTCs and MES programmes as also improve progression opportunities to Polytechnics, Colleges of Engineering and higher education more generally and ultimately to employment. With the NVQF it is also hoped to progress from informal short TVET courses offered in the large unorganised sector, provided by various government agencies, NGOs and Industry to formal TVET. The implementation of these progression

pathways are incumbent upon improved quality and availability of TVET programmes, as well as a better linkage between what graduates know and can do and the skills and know that employers say they need.

Skills Upgrading Programmes for Industrial Workers and Workers in the Unorganised Sector

An important training provision under the MoLE for industrial workers and workers in the unorganized sector to upgrade their skills are through short term training programmes offered at Directorate General of Employment and Training (DGE&T) field institutes and selected ITIs in specialised areas (DGE&T, 2008).

90% of persons in India work in the informal sector employment which involves employment both in the organised as well as the unorganised sectors. The formal economy engages a majority of its working force on a contractual basis or as casual workers with very little or no security benefits (see King, 2007b on the overall culture of informality in training and economy in India). As per the National Commission of on Enterprises in the Unorganised Sector (NCEUS) merely 2.5% 12.5% of them have formal and informal vocational training respectively (NCEUS Report, 2009).

The Skill Development Initiative (SDI) through Modular Employable Skills (MES) is a competency-based training pathway providing the minimum skill sets needed for gainful employment. A trade committee identifies courses that provide competences meeting the demand of the industry and labour market and it develops a course matrix and curricula. Learners acquire employable skills in a shorter time and flexible manner. The programme targets workers, out of school youth, unemployed, previously child labour and ITI graduates. The institutes providing MES training have to be accredited by a so-called apex committee that assesses labour market demand and invites applications from vocational training providers. The testing of skills is done by independent bodies (DGE&T, 2008).

While the MES is also used by persons in the unorganised sector, there are no clear cut programmes both at State and Central to meet the demand from the unorganized informal sector. There are limitations of the public training institutions to cater for the needs of the informal sector (Chandra, 2008). The programme content of the existing formal institutions is inadequate to meet the demand. Training for the unorganized sector with low income people, who are mostly illiterate, is different from training in the formal sector. Usually workers in the unorganized sector need different pedagogical techniques which reflect what the trainees can handle. For example, the trainers must be actual practitioners, possibly from the same socio-

economic context as the trainee, they have to train in the local language, the ratio between trainees for trainer cannot be as high as in the formal sector, and training has to be conducted through hands on demonstrations. A successful method has been that of 'mobile workshops' combining on-the-job-apprenticeship with classroom instruction (ibid.).

Recognising the skills of workers in the unorganised sector is one of the aims of NVQF. Workers with few or no formal qualifications are most vulnerable in securing decent employment. By formally recognizing workers' skills recognition and certification of skills tailor-made programmes can be developed for the disadvantaged to learn further and to enhance their employability and mobility. However, there are challenges for skills recognition in the informal sector. The process of recognition must be accompanied by provision of public infrastructure which is affordable, reliable and efficient. There will be challenges in identifying where skills exist, documenting those skills, communicating to the potential candidates, as well as administering the process. Methods will need to be established, such as portfolio review, written/oral exams, and demonstrations. A relatively open examination system relating to a national qualifications framework and the relevant standards would need to be created for more transparency, so that it benefits those people who have often had to acquire their skills under conditions of great hardships outside the education system. Guidance and information campaigns would be needed for the learner to be guided through the process.

It is important also to mention the ILO recommendation 195 on a framework for recognition and certification of skills (ILO, 2004). According to this:

Measures should be adopted in consultation with the social partners and using a national qualification framework, to promote the development, implementation and financing of a transparent mechanism for the assessment, certification and recognition of skills including prior learning and previous experience, irrespective of the countries where they were acquired and whether acquired formally or informally. (ibid., p. 6)

Simply restructuring existing vocational training systems alone is not sufficient. Bottom up approaches such as skills recognition and certification need to serve as a support in programmes for upgrading skills and increasing productivity in the informal sector.

Linking Adult Education and Literacy to Skills Development

A neglected pathway within the TVET system has until recently been adult education and training. Despite growing investment in education, 30% of the population

is illiterate and only 50% of the students reach high school. About 60% of the school students drop out at different stages before reaching Class-X. In order to strengthen the link between second-chance non-formal learning to formal education system through equivalency programmes the National Literacy Mission Authority (2010) under the Department of School Education and Literacy, in the Ministry of HRD has developed several programmes.

1. Functional Literacy Programmes are equivalent up to to Standard III in the formal school system. Integral to the Government of India's Literacy Mission is skills development, especially for neo literates. The Ministry has merged the earlier literacy programmes with continuing education and training. The programme Saakshar Bharat (Literate India) launched by the Prime Minister of India in 2009 focuses on female literacy for neo literates who are 15 years old or older. The goal of the programme is to develop the skills of the neo literates to improve their livelihood opportunities by providing support for literacy and post-literacy linked to vocational education. NGOs and voluntary agencies are active in this programme. This programme is benefitting 70 million people. The focus is on providing marketable skills to improve livelihood opportunities.
2. An important second-chance pathway is the Basic Education Programme and Equivalency up to the level of Class 10, being implemented in collaboration with the National Institute of Open Schooling (NIOS). The NIOS offers 82 vocational education courses through its Accredited Vocational Institutions (AVIs), which include Government Institutes, NGOs and registered societies. To date 1,063 Accredited Vocational Institutes (AVI) provide training to neo literates up to pre-degree level (MHRD, 2011). The NIOS curriculum is equivalent to class III, Class V and Class VIII, at its own three levels of A, B and C. It requires that one of the 4 subjects at level A and one at levels B and C be a vocational subject. This vocational subject is then offered in consultation with an accredited agency which can provide an appropriate setting for the practical activity. A vocational course can be between 6 months and two years, gaining the NIOS's own certification (NIOS, 2006). Equivalency programmes include both academic and vocational content.

The NIOS has been successfully able to implement the National Curriculum Framework (NCERT, 2005, 2007) which recommended that the scope and focus of vocational education must be extended to the vast unorganised sector of self-employment, as well as cater to the requirements of adults – neo literates, out-of-school girls as well as semi-skilled and unskilled workers through multi-entry and multi-exit modular courses of varying durations.

The Final Draft of the NVEQF (IAMR, 2011, p. 24) states that the NIOS will have to align their courses to suit the requirements of NVEQ levels, but will also play a major role in offering bridge or foundation courses for seamless progression of students from one level to another.

3. Vocational and Skills Development through Community Polytechnics is another pathway for marginalised adults. In consonance with the National Mission on Skills Development and Vocational Education (see Planning Commission, 2007), a new scheme on Sub-Mission on Polytechnics has been undertaken by MHRD (2011). There is *inter alia* a proposal to set up Community Development Through Polytechnics (CDTP), in which each Polytechnic runs short-term non-formal skills development programmes through 5–10 extension centres in nearby villages (*ibid.*). *Jan Shikshan Sansthan* (JSS) (Adult Education Programme) meets the educational and vocational training needs of illiterate and neo literate adults and young people in urban and rural India, and are set up by voluntary agencies, which are provided financial assistance for taking up vocational training programmes for illiterate and neo-literate persons, people belong to socio-economically weaker sections, disadvantaged groups, unskilled and unemployed. The Ministry of Rural Development, the Khadi and Village Industries Commission, as well as the Department of Women and Child Welfare are government schemes reaching out to unemployed youth, women and trainers in rural areas.

Technical and Vocational Education and Training (TVET) has an important role in imparting skills training for employment, self-employment and enterprises, facilitating a process of economic empowerment of marginalized people. The thrust is to integrate market-driven strategies into design and implementation of pro-poor/marginalized groups-oriented training strategies. The training content is driven by a people-centred and local-demand pedagogy, which upgrades locally available skills, and empowers the people to secure livelihoods and face any crisis in their jobs.

Discussion Points

The Gap between What Is Being Said and What Is Achieved

India's education reconstruction that assumed priority after the independence was based on recommendations of various Commissions and Committees: the Educa-

tion Commission (1964–66) and the National Policy on Education 1986 modified in 1992 (MHRD, 1998); the recommendations of the Working Group on Skills Development and Vocational Training (Planning Commission, 2006) contributed towards formulation of XI the Year Plan; the Focus Group on Work and Education proposed a work-centered pedagogy to be the central organizing theme for reconstruction of the present education system (NCERT, 2007); the National Knowledge Commission (Planning Commission, 2001) whose focus was on increasing the flexibility of vocational education and training within the mainstream educational system; strong Public-Private Partnerships advocated in order to enhance training options available for the unorganized and informal sectors (*ibid.*, 2006); a Task Force on Skill development (*ibid.*, 2007) that emphasised a supply-to-demand driven policy, as well as the separation of Vocational Education and Vocational training in order to avoid policy gaps.

Despite all the commissions and committees, Chandra (2006) laments that the total enrolment in higher secondary vocational classes in regular schools (grades 11–12) is less than 3%. There continues to be a huge discrepancy between the official policy and practice. India continues to suffer from high dropout rates, poor educational achievements, teacher shortage in terms of absolute number, high teacher absence; and poor employment outcome for vocational training. The linkage between training and employment is weak in India (see Selected Educational Statistics 2008–2009). Only 28% of vocational graduates from vocational secondary school were employed or self-employed (MHRD, 2011).

India Needs to Forge Its Own Context Based Qualifications and Training Framework

Both NVEQF and the NVQF are informed by international experience. However, as Radhakrishnan and Patki (2009) emphasise, while valuable international models for the development of the NQFs can be utilised for capacity building measures, India will have to forge a context-based qualifications and training framework unique to its own requirements. This concern is reiterated by Young and Allias (2011). According to them, none of the international models seriously address the huge challenges of size and diversity that India is trying to tackle (*ibid.*). Furthermore, each is supported by long tradition of TVET, which would make policy borrowing difficult. Young and Allias (*ibid.*) also caution against the overemphasis on competency based training, and draw attention to the necessity of recognising the importance of inputs of learning and partnerships between employers, the state,

trade unions and TVET providers in the determining the structure of programmes and assessment of qualifications.

Despite the completely different order of challenges facing India, and the claims to be context based, there has been a considerable amount of policy borrowing from abroad, from policies relating to competency-based approaches, and training packages to public-private partnerships and the use of level descriptors for national qualifications frameworks.

Need for Greater Cooperation between MoLE and MHRD

Both NVQF (MoLE, 2009) and NVEQF (MHRD, 2011), claim that linkages between vocational schools and training institutions can be established, implying a closer cooperation between the Ministry of Human Resources Development and Ministry of Labour and Employment. However, up to now there are no signs of cooperation. Separate inter-Ministerial Committees for framing guidelines for the NVEQF and NVQF have already been established. According to the NSDP (MoLE, 2009) the NVQF will be developed as part of an overall NQF (NVEQF) and will conform to its broader guidelines and structure, but would operate largely autonomously with reference to the particular context of the vocational education and training system.

However, there are still divisions between, on the one hand, the focus vocationalising education, and on the other, the opening up of more opportunities for vocational training.

It is highly desirable that in the process of establishing the national qualifications framework, a more unified picture of TVET in India is promoted. Rather, there has been a conscious policy decision as seen in the Recommendations of the Task force on Skills development to make a distinction between 'vocational education' and 'vocational training' in order to avoid policy overlaps, between MHRD and MoLE (see Planning Commission, 2007).

Importance of India's Participation in Transnational Frameworks

Given the high demand for skills up gradation and lifelong learning the ground will soon be prepared to participate in the development of transnational frameworks. Globalisation of trade and employment has brought in a qualitative change the world over. As more NQFs develop, more possibilities for transnational comparisons arise. Worker and learner mobility is increasing and diversifying. However,

socio-economic development, and contexts for international mobility and recognition are hugely different from one region to another. Furthermore, recognition of qualifications is a complex issue: it entails both centralised decisions and responses on the side of qualifications authorities, as well as decentralised decisions and informal understandings at the level of labour market regulation. After all, qualifications alone are not the reason why worker and learners migrate. Currency in the labour market is equally important.

The International Labour Organisation has developed a Regional Model Competency Standards (RMCS) to improve the mechanisms of assessment of skills developed during a worker's overseas assignment. It is also hoped that opportunities for enhanced cooperation in the region will be promoted through the development of these mechanisms (Nepal, Bangladesh, India, Pakistan, Sri Lanka and the Maldives) (ILO, 2011).

The Limitations of Public-private Partnerships

While public-private partnerships is one of the central modalities of strengthening the existing education and training system, it is necessary to draw a balance between public sector and private sector provision. While on the one hand it is important to develop the non-public sector training market, a study by EdCIL (2005) concludes that many private or NGO –administered institutions provide non-formal and non-standard courses, and focus on a few types of skills and occupations. Over 60% of the private providers and about 40% of the NGO provides were accredited by a variety of government agencies. Unlike in the government run ITIs, a majority of students enrol in non-engineering and IT-related trades in the private ITCs. Almost 90% of private institutions surveyed in the EdCIL study are financed through fees. Moreover no institution received resources from the private sector (*ibid.*). In other words, partnerships with the private sector does not imply an automatic link to the industry.

Similarly in a study on state engineering colleges, Jha (2004, p. 2207) draws attention to risks of the increase in private sector-run engineering colleges (from 5 in 1997 to 70 in 2002), which he attributes to the withdrawal of government grants for public sector colleges. Because of commercialisation, the quality has not only been compromised, but there is also an underutilization of seats. Profit has become the only aim of these institutions and little attention has been paid to the issue of skills development. Jha (*ibid.*, p. 2208) points out that these seats could be offered for free to marginalized persons. The IAMR (2010) also points out that higher costs render private technical education beyond the reach of the economically backward

segments, which are most in need of technical education. At the same time a right mix of private public partnerships is needed in order to overcome the inertia of the public sector.

Recognising the Bottom-most Layer of the Human Resources Pyramid

Based on studies in three states (Tamil Nadu, Andhra Pradesh and Punjab) (Rao, 2008) it has been forecasted that an incremental demand for human resources till 2015 can be compartmentalised into four levels: the bottom-most layer comprises about 40–45% of the human resource pyramid (see Fig. 4).

This pyramid shows that the approach to human resource development will have to be a multipronged one. The first pillar, which the MHRD is promoting (IAMR, 2010; TeamLease, 2007) is the creation of educational pathways with options towards vocational training and implemented in the curriculum of the school system. However, relating vocationalising education in schools with the vocational training associated with training institutions has in the past been rather difficult to implement. King (2007a) referring to an earlier proposal by the NCERT national Focus Group on Work and Education (2007a) to create VET centres outside the school

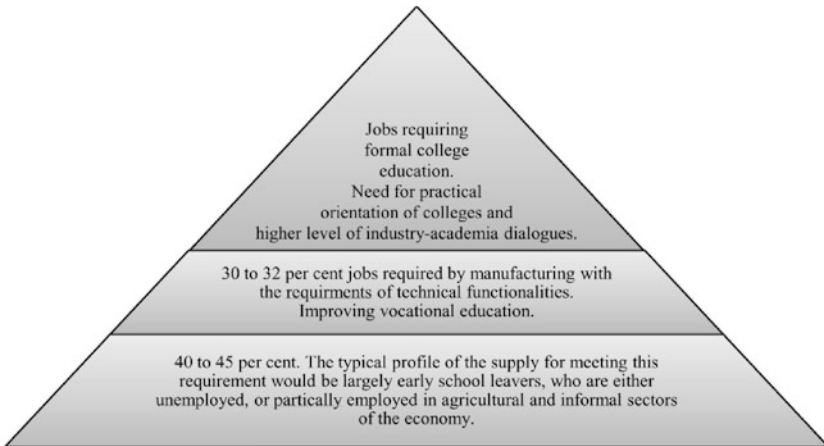


Figure 4 The three bottom-most layers of the human resource pyramid in India (Source: Adapted from Rao (2008))

system, notes that it was difficult to implement as one is related to skills development to be implemented in the curriculum of educational institutions and the other is related to skills development outside the general school system.

The second critical pillar, is to concentrate on creating more training programmes outside the network of the education system but with progression to academic learning as their most important objective. Vocational training is important not just to be able to get a job but it is also required to improve productivity levels for the self-employed and those employed in family business (TeamLease, 2007, p. 16).

In order to realize the second pillar, the biggest challenge is to cater to the training and education needs of the bottom-most layer of the pyramid. Up to now the TVET system has been catering for the non-degree courses through its ITs, ITCs, and MES programmes. These offer limited progression to Polytechnics, Colleges of Engineering and more generally to higher education. There has also been a lack of progression from informal short TVET courses offered in the unorganised sector. Many of these programmes have been introduced in a fragmented and ad hoc manner by a range of different Ministries. The challenge therefore will be to improve the progression possibilities for students from MES to ITI and ITCs for example, and at the same time to raise the knowledge base of the students to the level that would enable them to pass entrance examinations or to cope at the higher level. More training programmes with progression possibilities should be offered to workers in the unorganized sector and adults with low literacy and educational levels.

Both pillars are critical and will require the close cooperation between the MoLE and the MHRD as well as with the other 17 or so other Federal ministries that are involved in TVET. Currently, there is none or very little coordination between the different government Departments. The Prime Minister's National Council on Skills Development and the National Skills Development Coordination board will need to take steps to address the organisational coherence of TVET.

Crisis-related Rationale of Skills Re-training and Adult Learning

The global economic downturn has underlined the crisis-related rationale of skills and re-training. At the micro level, as ILO (2009) points out, the downturn afforded the opportunity for some enterprises to invest in skills in anticipation of recovery, to reduce obsolete skills. For economies that viewed the current passage as a change in economic structure, investment in skills required for the future is the appropriate response to skill training when targeted towards the disadvantaged and displaced

workers and tailored to fit local market needs. A World Bank study of 2008 indicates this (World Bank, 2008). Further targeting appears important. S. Pillai (2009) points out that initiatives aimed at adult women are particularly successful. In general, it can be said that adult learning and vocational education is an important tool for addressing global imbalances through new patterns of sustainable growth. (S. Pillai, 2009). The innovative linkages between adult learning and skills development and vocational education need greater attention than at present.

The Quality of Vocational Education and Training Needs to be Revamped

In their Report on Options for designing an NVQF for India, Young and Allais (2011) caution that the NVQF is not a solution to the problems of the quality of Indian education and training. Yet, at the centre of NVEQF and NVQF is vocational education and training reform. Already in 2002 Tilak highlighted some future developments in vocationalising secondary education for developing countries as a whole. These were: (1) the provision of vocational education related to demand for skills; (2) the balance between size of general education and vocational education; (3) the importance of knowing which vocational and technical skills are to be provided in schools and which in the training institutions and enterprise-based organisations; (4) adequate allocation of resources to vocational in order not to promote inequalities within the educational system, and to provide good quality VET comparable to general secondary education; (5) private sector may not be about good quality VET; (6) effective linking of vocational education with higher education, so that it is not perceived as dead-end, with no opportunities to go for higher education; and (7) VET planning should take into consideration the links with social, cultural, historical, economic, technical and political parameters (Tilak, 2002, pp. 15 et seq.).

The MHRD acknowledges that the NVEQF will need to be accompanied by reforms in the TVET system, linking education and training and qualifications to: a user determined or demand-driven training system; quality assured provision, as well as the recognition of prior learning that will serve as a linkage between work-based qualifications and academic qualifications (MHRD, 2011).

There is also consensus among stakeholders that vocational education needs to be incentivized by industry either by offering incentive packages or by developing a process of certification (Press Information Bureau, 2010); suitable trainers as well as students both need to be motivated and incentivized (by ensuring a secure job opportunity) for attracting them to vocational education; the manpower produced

at the vocational, polytechnic or at the degree level should have core competences needed for the industry; the so-called skilled manpower is further required to be trained for 2–3 years to shape them as per industry requirement.

However, other authors (Radhakrishnan and Patki, 2009, p. 43) argue that the real challenge for the formal TVET is to reach 90% of the labor force in the unorganized sector.

Challenges of Establishing the Linkages between Education and Training and the Labour Market

While the internal efficiency of training programmes is one side of the coin. On the other side, there are challenges concerning the external efficiency of training programmes. According to an ILO (2003) study, neither ITIs nor ITC graduates perform well. According to this study, employment of ITI/ITC graduates in the organized sector is very low. In one of the states, Andhra Pradesh, unemployment of the ITI grades was found to be around 33%. It was even higher – 70% – for the graduates from the private ITCs (ILO, 2003). Similarly, a 2003 DGE&T study of graduates of apprenticeship training concluded that the labour market relevance of the training was in doubt. People were being trained in obsolete trades. Despite the increased supply from ITIs and ITCs, employers still face the problem of finding the right persons for the right job. A study by EdCIL (2005) concluded that although the interaction of private institutions with industry is more than that by government institutions, it is still quite minimal, about 10%.

The Relationship between TVET and Economic Development Is Not a Linear One

Vocational education and training were thought to solve many educational problems (such as the financial crisis in education and unemployment) on the basis of some assumptions highlighted by Tilak (2002): (1) it can produce highly qualified middle and lower level skilled personnel needed to work with modern technologies; (2) it can establish a closer relation between school and work; (3) it can be an equity measure because it serves the needs of the relatively poor people, and it is inclusive because it addresses the high dropouts, by providing a more interesting and job-relevant curriculum; (4) it can contribute to develop a 'skill culture' and positive attitude towards manual work, in contrast to pure academic culture.

However, the argument that vocational skills and education have enhanced employability in India has been criticized by various authors. As Singh (2003) argues, employability is always relative to employment availability and enhancing the employability without tackling demand side bottlenecks would mean surplus skilled labor in place of surplus unskilled labor leading to an overcrowding and 'bumping down' of low skilled workers as well as increasing competition for jobs (Singh, 2003, p. 3275). As simply explained by Sen 'if there is already a pool of 10 educated unemployed people and one more person is educated, the number of jobs remaining the same, one more person will be added to the pool. So now 11 people will be unemployed' (1971 cited in Singh, 2003, p. 3275). Vocational education becomes popular mostly where jobs can be guaranteed. The fact that people have vocational skills does not mean that unemployment rates diminish. When the economies move away from reliance on its agricultural and manufacturing sectors and in favor of the service sector, the demand for VET may decline (Tilak, 2002). Indeed Schultz admits that: 'there undoubtedly have been over investments in some skills, for example too many locomotive firemen and engineers, too many people trained to be farmers and too many agriculture economists' (1968 cited in Singh, 2003, p. 3276).

The bottom line is that skill wages of educated or trained people in India seem to be low not only due to supply-side factors such as the quality of education and training, but also due to the small-scale demand for those skilled workers because of the small-size of the formal labour market.

Developing qualifications according to the requirements of emerging sectors through the development of Sector Skills Councils could be a good way to meet skill gaps and at the same time increase the size of the formal labour market. Given the decision to develop Skill Sector Councils, it will be possible for the NVQF to classify qualification type on the horizontal axis according to occupation field or industry.

Beyond Reasons of Improving Employability, Finishing (Vocational) Secondary Education Is Necessary for Well-being and Human Development

While the ultimate goal of vocationalisation of secondary education is to prepare educated, employable and competitive human resources for various sectors of the national economy and the global market, we should not lose sight of the fact that completing secondary and higher education are necessary per se for general well-being and development. According to Tilak (2007), in the past, there has been

a general presumption among many policy makers that secondary and higher education is not necessary for economic growth and development and therefore there has been a tendency to focus only on literacy and primary education. According to Tilak, this general presumption is not valid. Rather, post-elementary education is important for the reduction in poverty, improving infant mortality and life expectancy, and for economic growth (ibid.). With the current Indian policy to emphasise the vocationalisation of secondary education, the connection between secondary education and human development should not be forgotten. Vocationalisation of secondary education should not only be about employability but more importantly about human development, poverty reduction, and improvement in living conditions and wellbeing.

India Suffers from a Prejudice Against Manual Work

India suffers from a 'prejudice against manual work', which affects the prestige of VET, seen as a system of education for the poor, and educationally backward who are not eligible for higher education (Tilak, 2002). For example an educational rural curriculum, called 'Rajaji experiment', carried out in Tamil Nadu in India was abandoned because there was no demand for such education, and because it was viewed as a *Brahmanical* conspiracy and as a something designed to keep the underprivileged away from the prestigious academic curriculum (Wijemanne, 1978). Policy makers therefore need to find out ways of how not to create a second-class education for second-class citizens who will be kept away from academic education and access to the jobs with the highest pay and status, as claimed by critics of vocational education and training (Blaug, 1973, Grubb, 1985 and Foster, 1965 cited in Tilak, 2002).

King (2007a) also mentions that several of the laudable reform initiatives and proposals linking vocational education and practical experience, such as proposals made by the National Focus Group on Work and Education (NCERT, 2007), have still not being implemented; 'There has not yet been any specific syllabuses developed at elementary, secondary or higher secondary for the vocational subjects' (King, 2007a). While NVQFs and NVEQFs are not going to automatically lead to mobility, the vertical or horizontal integration of vocation training to higher professional/technical education could make vocational training more popular and prestigious.

Overall Culture of on the Job Learning But Lack of In-service Training

Of the workforce who comprises 450 million today only 8–10% works in the organised workforce. According to King a part of the problem of the small and low funded formal vocational education and training sector, 'needs to be seen in the traditional preference for training workers on the job' (2007b, p. 2). He also states that 'it is important to underline the point that informal, learning-on-the-job systems operate very extensively within both the formal and informal economies of India, and indeed across South Asia' (King, 2007b referring to Ul-Haq and Ul-Haq, 1998).

While on the one side informal on-the-job training for acquiring low level skills is rampant in the Indian economy, the situation with regard to in-service training needs examination as well. Although Indian companies are 'good capitalists', they are generally not interested in investing in training people, particularly when there is the likelihood that they will lose them again after a short period. Not more than 17% of manufacturing establishments in India provide in-service formal training. No more than 7% of employees received training in a given year. The proportion of workers in Indian being training is especially low among micro- and small firms where fewer than 4% of employees have received training. (Tan and Savchenko, 2005). Neither do Indian companies get incentives to train their employees.

In general, the awareness of the importance of vocational education and training is missing in the Indian society and economy. There is therefore a need to overcome the traditional divide between participation in training and engagement in employment. In this climate of rapid change such a strict divide can no longer be sustained and it is important to see the need for learning as relevant both before and during employment.

Final Thoughts

India's NSDP has been a significant initiative. While both NVQF and NVEQF are similar to other NQFs in generic terms, they have different thrusts and targets. NVQF seeks to covers all TVET programmes and qualifications including the non-formal and non-degree programmes to enhance vocational training programs for the organized and particularly the 433 million large unorganized economic sector and to integrate these with education programmes eventually through a comprehensive national qualifications framework. At the same time, with the announcement of the proposed NVEQF, India has taken an equally important step to overcome the

challenges in mobility, between vocational secondary education and higher technical and higher education.

If the issue of progression is to be addressed then both NVEQF and NVQF are necessary. But these will need to be accompanied by programmes, for the different layers in the human resource pyramid, especially for the lowest layer of the human resource pyramid, and these programmes need to treat progression as their major objective. If there are no quality programmes to progress to then, no frameworks can be useful. Well articulated pathways will also depend on coherence in quality teaching and institutional arrangements.

The strong emphasis on competences and learning outcomes, the current initiatives around recognition and certification of existing skills and the policy commitment to ensure that education and training reforms have an impact on improving the employment opportunities for all of the working population are indicative of a positive future. However, as Young and Allias (2011) stress, outcomes must be complemented by inputs, i. e. the knowledge that a learner needs to acquire if he or she is to be capable of moving beyond his or her existing performance. Curriculum development cannot be left to policy makers and planners in Ministries. Professionals from industry and polytechnic will need to be involved in designing syllabuses and assessing units of knowledge.

Overall, India's skills policy has flagged the need to continue to be responsive to future needs of its labour market and population. However, the question that still eludes is who is steering the NSDP and with it, the NVQF and NVEQF, and what are the roles of the different stakeholders? The joint effort and the consensus of relevant and visible leaders comprising employers, workers, educators, and government officials, is the single most important factor for success.

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Continental Europe



Challenges for Evidence-based Policy in European Education and Training

Torsten Dunkel

'There is nothing a government hates more than to be well informed; for it makes the process of arriving at decisions much more complicated and difficult.'

John Maynard Keynes

Introduction

Internationalisation and Europeanisation of education and training (E&T) refer to learning as new information which has to put into play with past experience at various levels. On the backdrop of Europe 2020, the European Commission (EC) and its Member States (MS) engage themselves in policy reflection jointly to face the common challenges and to evolve good policy approaches for E&T within the open method of coordination (OMC) framework (ET 2020). In June 2010 the Heads of State and Government adopted the post-Lisbon strategy towards Europe 2020 aiming at smart, sustainable and inclusive growth proposed by the EC (European Commission, 2010b). This policy framework requires a thorough analysis and grounded knowledge to support the policy makers in Member States and the Union.

There is a need for better integration of the various constituencies and objectives in E&T allowing for shared deliberation and decision making processes. The adoption of the OMC and country reviews have led to reporting (of progress) procedures including indicators, benchmarks, scoreboards and peer learning (i. e. exchange of experience as good practices) among the MS. European benchmarks are used to drive cooperative policy exchange voluntarily between MS and the Commission and to monitor progress on the key policy issues. Such exchanges need strong evidence,

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which are expected to be generated through a comparative research. Comparative research method relies on:

- A deep and reflective understanding of different systems of (vocational) E&T to locate well-established processes and structures in other countries. It can help optimising domestic vocational education and training through country-specific adaption ('good practice').
- Knowledge of foreign circumstances and backdrops will enable to evolve a clearer perspective on the domestic situation; learning from the mistakes of others is crucial to foreseeing possible obstacles (situational approach, policy learning).
- New scientific epistemological interests, research findings and method developments in comparative research focusing on vocational education and training are of important values in making the best analysis possible (research based and evidence-based policy).

Evidence in E&T Research

'Evidence based policy making' refers to an approach to policy making and implementation using rigorous techniques to develop and maintain a robust evidence base. All policies are in principle based on evidence – the question is more whether the evidence itself, and the processes through which this evidence is put to turn it into policy options, are of sufficiently high quality.

Evidence is salient in shaping and enhancing practices. But what is behind evidence and makes it valuable? The value of evidence light depends on:

- the evidence itself
- the process of generating evidence
- the process of transforming evidence into policy options.

Both the EU and the OECD share the following definition of evidence-based policy as 'the conscientious and explicit use of current best evidence in making decisions and choosing between policy options' (European Commission, 2007, p. 3; OECD, 2007, p. 16). As for evidence-based practice is concerned it is about disciplinary methodological standards around identifying causality vs. descriptive analysis. Gorard and Taylor (2004) distinguish in their simplified and stylised model

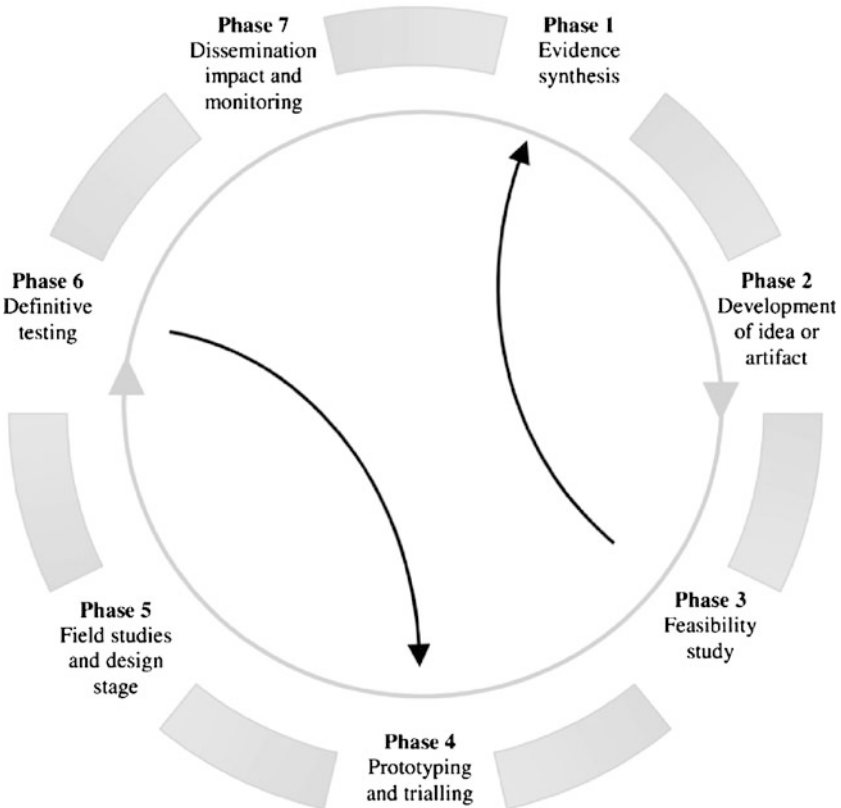


Figure 1 Full cycle of education research to generate evidence (Source: OECD (2007) based on Gorard and Taylor (2004))

seven phases of a full research cycle, which are divided into two sub-cycles with the first one being descriptive and conceptual and the second one analytical (see Fig. 1).

Reviews and secondary analyses are carried out in Phase 1. Theory-building and small-scale fieldwork are carried out in Phase 2, and so forth. Smaller experiments are being conducted in Phase 5 and a full randomised controlled trial only appearing in Phase 6. Experimental designs are not privileged for all of these phases and that other means are preferable, especially for the first four phases. Experiments are currently lacking in education research practice at large, most education research remains in Phases 1 to 4 (Cook and Gorard, 2007).

The evidence driven debate is not only about the importance of evidence but its nature and value attributed on it. It rather deals with the power and value ascribed to certain forms of evidence in supporting propositions that arise in E&T practice.

Without evidence, policy makers often fall back on intuition, ideology or conventional wisdom. They may also miss opportunities or make costly mistakes. But there are challenges to evidence-based policymaking namely: little usable evidence, limited resources, political or commercial pressures, habits and traditions. Evidence is just one factor shaping policy. It is helpful to understand the other factors to be effective in policy making. Policy is not only shaped by information alone but also by ideology, institutions and interests.

The idea of evidence-based practice has its origins in the field of medicine. It has also been advocated and adopted in more distant fields of professional activities, such as social work, human resource management, and, last but not least, education. Critics question that although evidence-based practice may at first sight seem to provide an attractive framework for bringing research and professional practices closer together, there is a real question as to whether it offers a neutral framework that can be applied simply to any field of professional activity, or whether it is a framework that brings with it a particular view of professional practice (Biesta, 2007; Elliot, 2001).

The recent increase in interest in evidence-based policy making comes in response to a perception that governments need to improve the quality of decision-making.¹ Behind this orientation to outcomes and policy impacts have been the greater interest shown by funding agencies. They want to see the effectiveness of educational expenditure, as it is a major aspect of public funding generally. Evidence-based policy is designed to deal with the distorting effects of ideology, politics, shoddy science and loss of confidence in governments. It is embedded in a complex process with multiple phases. Therefore evidence has to be both appropriate and convincing.

An evidence-based approach to policy making is important because policy makers should conceive policies that really deal with problems that are forward-looking and shaped by evidence rather than a response to short-term pressures. They tackle the causes and not the symptoms. In short, it is about making sure that the policies are based on a sound and comprehensive understanding of the evidence available at the time; and developing a strategy to maintain, and update as necessary, the evidence base for future strategy and policy.

¹ For example, in the UK where many critics argued in the past that policy decisions were too often driven by inertia or by short-term political pressures which led to Modernising Government activities at the end of the 1990's and the beginning of the 2000's.

Table 1 Criteria for appraising evidence (Source: Thomas (2005))

Criterion	Enabled by
1. relevance ↓	establishing that the information constitutes information for (or against) some proposition
2. sufficiency ↓	corroboration with other instances of the same kind of evidence or other kinds of evidence
3. veracity	establishing that the process of gathering evidence has been free from distortion and as far as possible uncontaminated by vested interest

Policy decisions are influenced by a wide variety of factors (including high level decision makers' values, experiences and political judgment). This means that even in individual policy areas the evidence base must be both broad enough to develop a wide range of policy options, and detailed enough for those options to stand up to intense scrutiny.

In a policy-making context, evidence is foremost hard facts but evidence is more than that: evidence is any information that policy makers can use to turn its policy goals into something concrete, achievable and manageable. It can take many forms such as research, analysis of stakeholder opinion, consultation of experts, economic and statistical modelling, public perceptions and beliefs, anecdotal evidence, cost/benefit analysis; and judgment of the quality of the methods that are used to gather and synthesize the information. Evidence is also the analytical reasoning that puts the hard data in context. The evidence base comprises stakeholder opinion on an issue or set of issues, especially in VET where stakeholder participation is salient. This combination ensures reliability of evidence. If there is any weakness in the hard data on which a policy option is based, one will need to fall back upon the analysis that underpins the data. If there is any weakness in the analysis, or any risk that others could bring an alternative interpretation to the table, then one needs to go back to the stakeholder base to understand the different interpretations that could give rise to different analyses of the same set of data. Hence it should not be confounded with proof.

In E&T for information to constitute evidence, it has to pass a number of tests on relevance, sufficiency, and veracity as proposed by Thomas (2005) and presented in Table 1.

First, evidence is information supporting (or refuting) an assertion, and it must pass the test of relevance if it is to move from informational noise to potential evidence through *prima facie* evidence. Second, the potential evidence has to be

considered with other pieces of information to determine its corroborating power. Quality and sufficiency of evidence here begin to be related to the epistemological ambitions of the proposition. Third, decisions have to be made about the veracity and trustworthiness of the evidence against possible manipulation and distortion. Such questions arise principally because of the interests that exist in any research enterprise – interests usually surrounding personal gains. Here, the existence of corroborative evidence is again essential in helping to determine veracity.

Evidence becomes useful and valuable by right timing, investment, quality, availability, trustworthiness and presentation. Evidence and research practice can vary across different domains of inquiry and practice. In some disciplines it has little role for experimentation. Totally it relies on idiographic evidence with a trust in the testimony of expert and trust in those who made the discovery. Replication of the work is hardly feasible. The subliminal danger here is that a community is bound to believe its own rhetoric.

Evidence-based Practice

Practitioners do ‘common interpretive acts’ (Schatzman, 1991, p. 304) by using everyday heuristics and generating knowledge. Their findings will be reviewed, discussed with colleagues. They will be applied and informally judged. The confidence in such processes may render them resistant to the imposition of other kinds of evidence. Consequently, Gough (2007) suggests weighting evidence to better handle the diversity of knowledge produced due to various ideological and conceptual standpoints to develop theories and empirical statements about the world. This variation creates immense complexity for the evaluation of the quality of different types of knowledge but this diversity can be managed and understood by reference to the world views of those creating and evaluating this knowledge and their reasons for undertaking such judgements. Reliable evidence ranges from isolated observation, to *prima facie* inconclusive evidence depending on the issues at stake. Corroboration might turn inconclusive evidence into knowledge.

The social context of evidence is crucial in determining the validity – around the need for collection and collation of good quality and reliable evidence. Many proponents consider randomised controlled trials (RCTs) as the gold standard, in applied statistical work, thus form superior evidence (e.g. Slavin, 2002, Burns and Schuller, 2007). But its use does not enable the establishment of causal connections. Nor is its use necessary for causal connections to be inferred.

Collating and synthesizing evidence brings together what is known in relation to any conceptual or empirical question: 'Systematic reviews are the primary method for managing knowledge in the evidence-based policy approach. This is because they synthesise the findings of many different research studies in a way which is explicit, transparent, replicable, accountable and (potentially) updateable' (Oakley, 2000, p. 3).

This can involve quality and relevance assessment of the research studies at various stages of a review. Despite variations in how such assessments are made there is a distinction between generic judgements of evidence quality according to generally accepted criteria (within that approach to evidence) and review specific evaluations based on the fitness for the purpose of the review.

Policy Learning as Adaptive Evidence-based Process

Policy learning emphasises the development of national capacities to lead the design and the implementation of VET reforms. It supports processes for looking beyond national borders, particularly through peer learning, whilst retaining an emphasis on the national context. Policy learning seems to be a more effective way for governments or systems of governance to inform policy development by drawing lessons from available national and international evidence and experience (Chakroun, 2008).

In contrast, policy borrowing and lending is about the transfer of policies from one political system to another by adapting to different national or cultural contexts. Ochs and Philips (2004) note a continuum in the dynamics of education transfer processes, ranging from reforms that are imposed (policy lending) to those that are more voluntarily sought or accepted (policy borrowing).

Policy learning implies the involvement of stakeholders in promoting collaborative decision making and introduces new tools to support evidence-based policies. The research indicates that a normative model of policy learning applicable to all countries and contexts does not exist (ETF, 2008; Raffe and Spours, 2007).

An important mechanism for policy learning is peer learning (Nikolovska and Vos, 2008). Peer learning is about bringing together policy makers from different countries to discuss about the approaches to reform VET systems and to analyse policies deemed to deserve wider attention and scrutiny, whether in more industrially advanced countries or in countries at a similar stage of development as their own. Peer learning serves a variety of policy-related purposes including understanding VET systems better by contrasting them with others, identifying common

trends and pressures, clarifying alternative policy strategies and identifying issues that could arise from each option (Chakroun, 2008).

Contemporary interest in trans-national policy learning is prompted by a perceived growth in policy transfers and attention is focused on measures employed by other countries which may be used to deal with problems similar to one's own ('governance by comparing'). Such organised intelligence gathering to survey VET policies from other countries in Europe leads to systematic policy reviews to support the policy maker, e.g. Cedefop's² policy review, feeds regularly into Commission policy documents. The 2010 report takes stock of progress towards commonly agreed objectives and priority areas for VET in the EU set up in the Copenhagen declaration and the subsequent Maastricht/Helsinki/Bordeaux communiqués and related Council conclusions.³ To inform European VET policies, Cedefop following its mandate renewed in the Bruges Communiqué (European Commission, 2010a), analyses progress by countries in implementing agreed European VET policy priorities in the Copenhagen Process and publishes a comparative analysis of policy developments (see Cedefop, 2009, 2010; Lipinska et al., 2007; Tessaring and Wannan, 2004). Much of the information for the report comes from stakeholders as the Directors General for Vocational Training and the Social Partners as well as from Cedefop's European network of reference and expertise,⁴ which covers all MS, Norway and Iceland. It complements the Commissions' annual progress report. Additionally, information is usually collected on an ad hoc basis and in response to particular needs (Dunkel, 2010).

European E&T and in particular VET policy analysis is characterised by a strong participatory approach in MS (covered by Cedefop) and additionally in candidate and partner countries a capacity building approach (covered by the European Training Foundation (ETF), Cedefop's sister agency). The participatory approach comprises agreement on the process and framework by Ministers in charge of VET, multi-stakeholders involvement, focus groups, self-assessment by countries, joint validation and formulation of recommendations. The capacity building approach includes support to reinforce evidence-based policy making mostly in partner

² Cedefop is the European Centre for the Development of Vocational Training. It supports the development of VET and evidence-based policy making by providing advice, research, analysis, information, and stimulates European cooperation and common learning.

³ See the following documents: The Bordeaux Communiqué on Enhanced European cooperation in vocational education and training (2008); Council of the European Union (2008); Council of the European Union (2009).

⁴ ReferNet is Cedefop's network of reference and expertise on vocational education and training. Each national ReferNet member is backed by a consortium of VET related organisations. ReferNet Members provide Cedefop with information on VET developments in their country.

countries, identification of national lead institutions and pilots, evolving towards guided self-assessment. Further an evidence-based approach comprises knowledge triangle policymakers (education-research-innovation), practitioners and researchers, use of various types and sources of evidence, including data, indicators, research, good practice and qualitative assessment.

The policy review highlights a number of attempts to transfer VET policies and presents a range of factors that can potentially inhibit trans-national policy learning. A trend emerging towards more 'open and transparent governance' is noted that requires policies and processes to be better understood in their systemic contexts, as well as the shifting institutional environment in which they operate (good practice), signalling that policy learning takes place (Cedefop, 2010).

Policy learning is one of the key governance strategies through which the European Commission's Education and Training Programme 2010/2020 is implemented. Learning and governance transform each other.

Using Radaelli's (2003, pp. 33 et seq.) definition of cognitive Europeanisation in the field of social policy as the 'shaping and reshaping of the perceptions of and attitudes towards social problems and the way to tackle them', convergence can be understood as taking place at various levels. It entails the redefinition of education purposes while not always aiming to redesign institutional practices. Further, it includes a range of 'hard' and 'soft' versions of persuasion through 'peer learning activities' and the comparison of countries' performance against benchmarks and indicators. Policy learning in this context refers to 'peer learning' or 'mutual policy learning' where MS learn from each other's policies. Though this undertaking originally started as a non-instrumental conception of policy learning that recognises the significance of ideas and discourses in changing the thinking about policy (Hall, 1993) it soon fell under the metrics, and thus the effectiveness of policies (Bennett and Howlett, 1992; May, 1992).

Monitoring Progress towards the Europe 2020 Targets

The indicators and benchmarks that should monitor the progress and contribute to evidence-based policy are commonly adopted. Monitoring progress and agreements on common objectives for developments translate into indicators and benchmarks. The indicators can be classified along dimensions such as input vs. output, e.g. investment in E&T, adult skills, stock vs. flow educational attainment, pre-school enrolment, early age vs. adult indicators, quantity vs. quality as well as internal vs. external ones. Further methodological aspects include a multidimensional

Table 2 The five benchmarks for 2020 (Source: European Commission (2011))

1.	at least 95% of children between 4-years old and the age for starting compulsory primary education should participate in early childhood education;
2.	the share of early leavers from E&T should be less than 10%;
3.	the share of low-achieving 15-years olds in reading, mathematics and science should be less than 15%;
4.	the share of 30–34-years olds with tertiary educational attainment should be at least 40%;
5.	an average of at least 15% of adults should participate in lifelong learning.

approach vs. single composite indicator as well as the optimal combination of various dimensions, indicators and variables (OECD and EU JRC, 2008).

In May 2009 when re-launching the process for the decade ahead, the Council adopted a renewed set of benchmarks to be achieved by 2020 (see Table 2). There is by and large continuity with the earlier set of benchmarks. However, there will be new benchmarks on early childhood education and on tertiary attainment among the young adult population; a broadening of the benchmark on low reading achievement to cover mathematics and science; confirmation of the benchmarks for early school leaving and adult participation in lifelong learning, with an increase in the target level for the latter. The 2010 benchmark on increasing the completion rate of upper secondary education has been discontinued on the basis that it is closely linked to the maintained benchmark on early school leaving.

Two of these five benchmarks – to reduce the number of early school leavers; and to increase the share of young adults holding tertiary education qualifications have been selected headline targets for the Europe 2020 in the field of for socio-economic development. These benchmarks link education and the labour market and gain importance for employability and jobs.

The wider framework of 16 core indicators monitoring E&T systems which the Council agreed in May 2007 as a means to supplement the analysis of education systems are listed in Table 3 (European Commission, 2011):

Table 3 Sixteen core indicators for monitoring progress
(Source: European Commission (2011))

1. Participation in pre-school education	10. Professional development of teachers and trainers
2. Special needs education	11. Higher education graduates
3. Early school leavers	12. Cross-national mobility of students in higher education
4. Literacy in reading, mathematics and science	13. Participation of adults in lifelong learning
5. Language skills	14. Adult skills
6. ICT skills	15. Educational attainment of the population
7. Civic skills	16. Investment in E&T
8. Learning to learn skills	
9. Upper secondary completion rates	

The benchmarks and indicators are embedded into the education OMC, clearly suggesting that policy goals for education systems can be divided into objectives and they can be translated into measurable entities. Within the context of building comparative policy exchange and learning, measurable entities are likely to be significant catalysts for shaping national education policies in directions envisaged by the Commission.

Peer learning, expert groups and policy learning complement the monitoring with more qualitative information based on cooperation within the OMC. The challenge is to link in a way that they are not only empirically robust, but also contribute to meaningful reviewing of the European VET systems.

Hence, policy learning becomes a deeply political exercise and Europeanisation tools such as the OMC have the capacity to challenge and unsettle national policy-making traditions. While the OMC can be used as a source of peer pressure and a forum for sharing good practices policy analysis suggests that most MS have used the OMC as a reporting device rather than one of policy development.

Biesta (2007) criticises the technically loaded discussion about evidence-based practice focussing on questions about what works while forgetting the need for critical inquiry into normative and political questions about what is educationally desirable. To improve the relation between research, policy and practice in education, he advocates an approach in which technical questions about education can be addressed in close connection with normative, educational, and political questions about what is educationally desirable.

On Words and Numbers – Qualitative and Quantitative Approaches

Monitoring challenges to evidence-based policy comprise experiential authority, complex causality, contextuality and actionability. Causality is about the nature of causal evidence, evidence as a system of rival cause and elimination of rival claims as strong evidence. Research that can inform evidence-based policy often requires complex methods to distinguish causation from accidental association. Challenges for methodological approaches entail generalisability and inference. In quantitative research sampling is large and random and inference statistical, whereas in qualitative approaches sampling is small and theoretical, and inference rather conceptual. Combining mixed methods to a multimethod approach is appropriate as different kind of questions require different methods (e.g. Gorard and Taylor, 2004).

Practical Challenges for Qualitative Policy Analysis

Qualitative methods comprise participant observation, in-depth interviews, focus groups, discourse analysis, and documentary analysis. They include the types of questions that qualitative methods can answer, the degree of rigour involved, and the usefulness of these types of questions in evidence-based E&T.

Among the disadvantages are that they cannot neither tell us anything about frequency nor indicate definitive strength of association. Other issues relate to time, cost and the high quality research requires high craft. Rigour implies disconfirmation, respondent validation, triangulation of data sources and methods, inter-rater coding, audit trail and last but not least reader responsibility! Qualitative methods can provide a high level of evidence and they are part of the wider process to evidence-based E&T policy.

Beyond the Quantitative-qualitative Divide – Unravelling the Gordian Knot

There are countries that are less experienced in quantitative methods in the social sciences as well as ones with a strong and rich tradition of qualitative methods⁵ such

⁵ Barnett-Page and Thomas (2009) show an increasing number of methods for synthesising qualitative research have emerged recently, originating mostly from health-related research. A number of methodological and conceptual links between these methods were identified and

as action research and case studies, especially in the domain of E&T where case studies have been conducted as pilot projects for a variety of initiatives with the intention of scaling up, if the experience was evaluated as favourable. Evaluation is performed through interviews, questionnaires, and a variety of other qualitative research methods, which are then synthesised into a general evaluation of the project, including recommendations for change. It is one of the strengths of qualitative research to provide the depth of information required for, e.g., recommendations for change or possible explanations of why something does or does not work (Burns and Schuller, 2007).

There is a need to gather in-depth knowledge in different cases and capture complexity of these cases, while attempting to make some level of generalisation. It further requires engaging in a dialogue between quantitative and qualitative empirical traditions. A possible tension field involves how to increase the number of cases without losing in-depth knowledge and still meeting the contradictory needs of internal validity, i. e. control and comparison, and external validity, i. e. correlation and broadening of scope while avoiding the contradiction between in depth knowledge and generalisation. While research should consider many potential explanatory variables when grouped into categories it also has to reduce complexity.

Methodologically this implies linking policy interventions to outcomes, identifying causalities, identifying net effects, purging out confounding factors and last but not least, answering the ‘what if’ question, i.e. generate counterfactual evidence and triangulating evidence as well as linking interest to outcomes. Qualitative comparative analysis (QCA) such as cross-case analysis or within case analysis confronts empirical realities with theoretical ideal types. There is a trade off between full complexity vs. parsimony, i.e. if too many variables are included uniqueness might occur, and in case of too few variables contradictions might occur (on QCA see Ragin, 1987).

Practical Challenges for Quantitative Policy – Statistical Needs

Monitoring activities pose a complex challenge and imply appropriate indicators and data, which are the essential decision support tools. This hints at the role of statistics-based knowledge in the making of EU policy. It requires technically integrated national statistical systems and a hierarchy of degrees of standardisation such

explored, while contrasting epistemological positions explained differences in approaches to issues such as quality assessment and extent of iteration.

as common survey instruments, ex ante harmonised framework, ex post standardised micro-data, ex post customised results and meta-analyses of results. Further, the acceptance of the EU reference source depends on the reconciliation of findings with those from well-established national sources.

Monitoring has to be ex ante as well as ex post. The EU has to be in a position to evaluate the relation between the National Reform Programmes of Member States and the target. Much effort has gone into design of common indicators but less attention has been paid to the criteria for monitoring progress. These include to agreeing ex ante on criteria for identifying shortfalls from expected trajectory; identifying ex post 'success stories' (on course), 'cases of policy concern' (where sustained shortfall), and 'warning cases' (where short-term departure); agreeing on allowance, if any, to be made for exogenous shocks. As a rule of thumb it is better to get it roughly right, than precisely wrong.

ESS statistics are used for evidence-based decision making. The high demand for more quantitative information as a basis for policy decisions represents a major challenge and a major responsibility, as statisticians have to ensure that the demanded figures are 'right for the purpose', but also 'right on time'.

As experience has shown, an early and close dialogue with the key users of European Statistical System (ESS) is indispensable to get an informed view on the relevance and, hence, on the merits of such statistics. This is in essence what Principle 11 of the European Statistics Code of Practice (relevance) says, which is one of the most important statistical quality principles (Eurostat, 2005). Coherence is achieved if indicators originate from a standardized data compilation based on national accounting frameworks (NA). As this rarely the case often horizontal efforts are necessary to ensure coherence.

Focusing on statistics to address the policy needs of higher relevance in Europe and re-prioritisation of statistical requirements might, however, not be enough in the current circumstances of statistical offices. An efficient priority-setting in the ESS, focusing on policy relevant statistics, goes hand-in-hand with the so-called 'European approach to ESS statistics' (European Commission, 2009). New production methods of statistics will require investments in a modern statistical function, in particular in IT and human skills, but at the same time they will yield in the medium-term important efficiency gains and cost savings to statistical compilers. These savings are indispensable in particular in periods of resource constraints. The new production methods of statistics should be seen as an investment in the future of statistics and in its essential role in evidence-based policy making. Lastly, the way of presenting the data and supporting communication tools should not be under-

estimated. Issues include websites, dashboards, scoreboards, and their accessibility, user friendliness, as well as meta-data.⁶

Improving Dialogue between the Two Worlds

The recent EU policy initiatives and the important role that statistical indicators will play in benchmarking and monitoring the progress of these policies are one of those topics for discussion between E&T researchers and policy makers.

Some data such as participation in E&T existed before being made EU benchmark indicators but the numbers were less prominent and less meaningful (i. e. relevant). At national level, other data sources were regarded to be more informative and valid. Making the numbers an international benchmark, changes the situation dramatically. Suddenly their 'meaning' is heightened and attached with new labels ('lifelong learning', 'knowledge society', etc.). Thus, European comparison adds a new dimension of meaning. Such careers of numbers are often bound to the emergence of new political concepts or issues. However, there can also be an 'overdose' of meaning. This is the case if numbers are not really adequate to tell the story they are supposed to do. Therefore, enhanced dialogue among the stakeholders for adding meaning to numbers, but at the same to be aware of gaps between meaning and numbers, and search for numbers that correspond better to the intended meaning is necessary.

Improving the dialogue between E&T researchers, statisticians and policy analysts (researchers, academics) and policy communities (decision makers) also helps avoiding a *dialogue de sourds* by bridging the gap of political constraints, funding, and different timelines. Communication of needs and priorities includes better understanding the different timescales required by each community (Burns and Schuller, 2007).

Interaction between the communities should focus on defining, producing and using statistics for policy purposes, and of course without compromising the necessary professional independence of statistical institutes. The indicators are linked to targets covering economic and social issues, and they have become part of the economic and policy governance of Europe. They reflect the complexities of the development of modern societies. These indicators act as a common language when assessing policy progress between the Member States.

⁶ Monitoring in the future implies increased use of the Internet as a data source and statistics, as eServices. From cloud computing the technological development might well enable soon cloud statistics (Sioli and Skaliotis, 2011).

The process of selection and development of indicators is a crucial phase (European Commission, JRC/IPSC, 2010). The users and producers need to interact from beginning itself early on. The research community has an important role in this work. Statistics for policymaking have to comply with the highest quality standards. The credibility of the whole policy framework depends critically on the quality of statistics used.

Developing statistical data for evidence-based policy making and learning set various requirements to statistics:

- quality challenges addressed, e.g. by the label 'official statistics';⁷
- react flexibly to new policy needs;
- addressing a wider public from policy-makers to citizens;
- explaining the rationale of statistical data production.

Statisticians and researchers should consider the user-friendly and easy to access dissemination of their results – benefiting greatly from modern tools of presentation and visualisation (visual storytelling) – in a manner that can be understood by the general public, including the policy maker. It is necessary to create an identity and a narrative for the goals of EU policy to engage an increasingly literate constituency, to promote transparency and accountability, to fill a space otherwise taken by stakeholders or other actors. Policy makers may wish to reflect on why evidence-based policy is important and to understand the research process required to produce that evidence,⁸ allowing for the creation of realistic projects and deadlines for reporting on the part of the researchers.

Finally, to make the policy making ever more efficient and transparent, it is essential that users and policymakers respect and understand the principles on which high quality official statistics are built. By this way only statistics can be used as an indicator that makes policymaking more accountable to the public.

Researchers and policy makers should also engage in inquiry about ends and this in close relation to the inquiry into means. There is a need to broaden the focus of monitoring beyond the 'technical' concerns of measuring effects, identifying causes and assessing 'what works'. This involves broadening its methodologies beyond 'an-

⁷ This label should be reserved for those figures which fulfil the requirements of the European Code of Practice for Official Statistics. Model-driven calculations and normative objectives, such as political targets or valuations, do not fall under this category. This difference should be clearly made in communication.

⁸ An interesting research issue in this context that goes beyond this paper would be to investigate further in how far it is possible to disentangle evidence-based policy from policy-based evidence (Godin, 2010).

alytic techniques' to include methods and accompanying institutional frameworks to promote full, free and open normative debate among all those with a stake in the policies concerned, including users and citizens (Sanderson, 2003).

Concluding with Kok's still valid statement that 'an ambitious report and broad reform agenda needs a clear narrative ... to be able to communicate effectively about the need for it. So that everybody knows why it is being done and can see the validity of the need to implement sometimes painful reforms. So that everybody knows who is responsible' (High Level Group, 2004).

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Comparative Analysis of VET Curricula in Europe

Dietmar Frommberger and Léna Krichewsky

Introduction

In the wake of the adoption of a European Qualification Framework and the implementation of a European Credit system in Vocational Education and Training (ECVET), member states of the European Union have been encouraged to reform their vocational education and training (VET) systems. By focusing on learning outcomes, which are expected to function as a ‘common language’ to facilitate the (international) mobility of learners and workers, these European instruments are calling for a new approach to qualification and curriculum development, assessment and VET delivery (Cedefop, 2008). Do we therefore witness a ‘shift to learning outcomes’ in the national VET systems across Europe? A research project sponsored by Cedefop was set 2009 to examine the use and understanding of learning outcomes in the VET curriculum of nine European countries, chosen to represent different models and cultures of VET: Germany, France, Spain, Scotland, Poland, Slovenia, Romania and the Netherlands¹. Based on the empirical research con-

¹ This paper draws on the results of the empirical research conducted in the framework of this project (Cedefop, 2010), but with a slightly different focus, as its aim is to develop a typology. Romania is not considered in this paper, because of missing data in some relevant dimensions of the comparison. Since devolution, vocational education and training has developed following different ways in the entities of the United Kingdom (England and Wales, Northern Ireland and Scotland). Although the overall organisation of the system is similar, the entities have developed their own curriculum policies. Scotland was chosen as one example which is representative for the British approach to VET qualifications, while offering some interesting specificities in terms of curriculum with the recent introduction of the Curriculum for Excellence.

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ducted within this project, a typology has been developed in order to compare curricula following three dimensions: their structure, the regulation mode and the pedagogical-didactical approach underpinning them.

There is currently no commonly agreed definition of the concept of 'curriculum'. Two opposed understandings at least can be identified in German- and English-speaking literature. On the one hand, curriculum may be defined as a document embodying educational intentions. On the other hand, the same term is understood by some authors as encompassing the activities (either planned or not) influencing the learning process, or as the totality of experiences made by learners in the framework of a learning process (Isenegger and Santini, 1975). Drawing on an extensive review of existing definitions, Adamson and Morris (2007) identify four dimensions of the curriculum. The curriculum can first be seen as a product of a social and cultural context, this is its ideological dimension. The second dimension pertains to the curriculum development and planning systems, the third dimension to the implementation, and the fourth dimension to the experiences made by the learner. According to the authors, each dimension has a range of typical tangible or intangible manifestations, which all call for specific research methods (see Table 1). This paper focuses on the planning dimension of the curriculum, starting from the curriculum definition developed in the framework of the Cedefop project: 'A curriculum is a normative document (or a collection of documents) setting the framework for planning learning experiences. Depending on the country, the type of education and training, and the institution, curricula may define among other, learning outcomes, objectives, contents, place and duration of learning, teaching and assessment methods to a greater or to a lesser extent' (Cedefop, 2010, p. 25).

The empirical data underpinning this paper were gathered through literature research and expert interviews (i.e. representatives of national curriculum agencies, the Ministry of Education, or other individuals regularly involved in curriculum design, such as teachers). Academic literature, policy documents, teaching materials and the interview transcripts were analyzed following a common analytical framework for all the countries. These researches were complemented by a case study in the field of Logistics: in each country, the syllabus and teaching materials of one or two of the most popular VET qualifications in the field of Logistics were examined and further interviews conducted in order to better grasp the details of curriculum development processes. Because of the fragmentation and diversity of some of the national VET systems, this paper is limited to initial VET at upper-secondary or post-secondary level (mostly level 3 qualifications in the European Qualifications Framework) and, within this field, to the most important pathway of formal education in terms of student numbers. As an example, in Germany the case study in Logistics was conducted in the dual system, in France it was conducted in school-

Table 1 Four dimensions of curriculum and curriculum research (Source: Adamson and Morris (2007, p. 274))

Aspect of curriculum	Typical manifestation	Typical research method
Ideology	Books; academic papers; policy documents	Discourse analysis
Planned/intended	Policy documents; syllabuses; prospectuses; teaching materials; schemes of work; lesson plans; assessment materials; minutes of meetings; notices	Discourse analysis; interviews
Enacted	Teacher and student action (e.g. use of time and resources); roles of teachers and students; student interest and involvement; classroom interaction (e.g. questioning patterns; use of group work); school interaction; student output	Lesson observations; teacher's log; interviews; ethnography; activity records
Experienced	Change in student attitude and/or behaviour; change in teacher attitude and/or behaviour; student's cognitive processes	Questionnaires; interviews; autobiographical narratives; reflections; psychometric tests

based VET at the level of the *Baccalauréat professionnel*, and in Poland in the 4-year secondary technical school.

Demand-oriented/Supply-oriented Curriculum Models

Theoretical Background/Description of the Model

The curriculum as a normative document represents the ideal type of a process of education, in terms of intended results, learning contents, time allocation etc. The curriculum can be seen as a set of standards to organize the differentiation between individual pathways within the education system. These standards are historical (Oelkers, 2004), varying therefore greatly from country to country. Different curriculum models can be identified in VET (Frommberger, 2010). One major difference concerns the structure of the curriculum, i.e. the way of composing and

sequencing the various learning and training areas. A crucial aspect is the extent of choice available to students with regard to the individual priorities: the different curriculum models vary with regard to the question, how the mandatory parts of education and training are combined with optional components.

These curriculum models can be placed on a continuum (Billet, 2000; Frommberger, 2004). The juxtaposition reflects the underlying assumption that the different models are the product of a rational allocation and the result of a negotiation process between stakeholders. The extent and form of differentiation within curriculae related to the functions of vocational education and training, which are dimensioned with the concepts of supply and demand orientation. On the continuum, we thus oppose demand-driven curricula to supply-driven curricula. The demand relates to the learner and to the needs of the learner. Demand-driven structures of curricula are characterized by more choices for the learner. The learner is the 'consumer' of learning possibilities, qualifications and awards. These very flexible curriculum models are the result of a strong response to the accepted and recognized requirements and needs of individuals. These requirements and needs are closely related to the expected employment and further learning opportunities. The supply relates to a regulation fixed by school, state or other authorities. Supply-driven structures of curricula are characterized by less choice for the learner. Responsible bodies offer a set of tracks and qualifications among which the learner has to choose. Such rather rigid structures, with high amounts of mandatory units, are to be understood as the result of strong state regulatory requirements. The curriculum defines a canon of duties, which have to be performed in order to obtain a vocational qualification.

This distinction between supply and demand in VET is based on the definition of the demand and supply side for the recording and quantitative analysis of the situation on the training place market in the dual system in Germany (see BMBF, 2010; Kutscha, 2006): the demand side represents the students looking for training places and qualification, whereas the supply side includes the provision of vocational education and training courses. This understanding differs from the usual understanding of labour market theory, where the demand side is associated to the demand for labour originating from employers, whereas the supply concerns the work force.

Empirical Results

The Logistics curricula analyzed in this study dispel a high degree of variation when placed on the continuum between demand- and supply-oriented curriculum mod-

els. Scotland and Germany are for instance situated both at the two opposite poles of the continuum, whereas the Netherlands offer an example of a mixed model (see Fig. 1). The typical demand-driven structure, to be found for instance in the further education sector in Scotland (this example is based on a Scottish Vocational Qualification, SVQ), is characterized by the following features:

- Qualifications and awards are relatively small and compact; the qualifications can be acquired separately, mostly on the basis of an assessment of formal or non formal acquired competences; there are very few mandatory units compared to the number of optional units.
- The learning path is individualized, taking rather the form of a portfolio than of a typical track. There is no standardized duration or learning place.
- The order in which units are completed is free and the curriculum does not define the contents to be learned.
- Units are assessed separately and there is no final examination.

A typical supply-driven structure exists in the apprenticeship system in Germany. This structure is characterized by the following features:

- Qualifications and awards are designed on a very broad concept of vocation; parts of the qualification are usually not certified separately.
- There are a limited number of typical qualification tracks, around 350, among which students have to choose when they leave compulsory education.
- The mandatory contents, learning outcomes, duration and order of courses are defined in a national curriculum.
- Courses are usually not assessed formally; instead a final examination assesses the whole curriculum.

Next to these two extreme models of curriculum, some countries dispel features related to both types of curriculum, for instance the Netherlands:

- Qualifications and awards are designed on a very broad concept – but parts of the qualification are assessed and certified separately.
- Learning pathways are fixed and students have to decide for one track when they leave compulsory education, as in Germany; but the possibilities to change the track are better: students can step over from one apprenticeship to another and have parts of their credits recognized.
- Units are assessed and certified separately, but there is still a final examination.

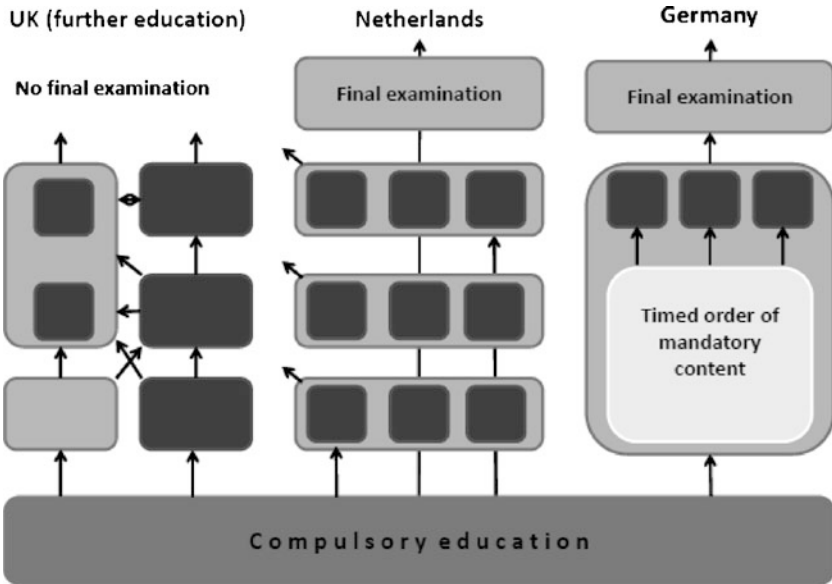


Figure 1 Demand-driven versus supply-driven curricula (Source: own research)

Interpretation of the Results

A shift to demand-driven structures can be observed in most countries, with new reforms tending to ‘open up’ the curriculum by introducing new forms of modularization and granting learners more choice (see Raffe, 1994; Gonon and Sgier, 1999; Pilz, 1999, 2009; Deißinger, 2001; Ertl and Sloane, 2003).

As a result, traditionally supply-driven curricula like the German one become increasingly flexible. In recently adopted curricula, apprentices can for instance more and more opt for specialization and elective units. Some qualifications are now also granted on the basis of two subsequent examinations, the first taking part after one and a half year of training and the second, which only assesses the outcomes of the second and third year of training, at the end of apprenticeship (*‘Gestreckte Abschlussprüfung’*).

On the other hand, countries with a strong demand-driven curriculum tend to introduce new forms of regulation, for instance by determining typical combinations of units or by determining the amount of learning dedicated to general education subjects in apprenticeship schemes (Wolf, 2011, p. 115).

As a result, a tendency to the centre may be noticed in European structures of curricula in VET. Typical demand-driven aspects are combined with more supply-driven aspects.

Outcome-oriented vs. Input-oriented Curricula

A second dimension for comparing VET curricula pertains to the form of governance embodied in the curriculum.

Theoretical Background/Description of the Model

Curricula have a regulative function within the educational system, shaping the action of teachers and trainers and acting as a translation mechanism between the educational values and goals of a society and day-to-day teaching and learning practices. This regulative function is performed at different levels, implying the use of different regulative instruments and different kinds of learning outcome formulations (Table 2):

Table 2 Different levels of regulation implying different forms of learning outcomes within the educational system (Source: Depover (2006, p. 23))

Decision level	Form of learning outcomes	Document types	Addressees
Political level	Overarching goals	Policy documents	All citizens interested in education matters
Management (administrative) level	General learning outcomes	Qualification standards, competence frameworks	Pedagogical staff, inspectors, teachers and trainers...
Practice level	Specific learning outcomes, learning objectives	Learning programmes	Teachers and trainers

Table 3 Classification of steering tools for instruction (Source: Sloane and Dilger (2006))

	Input:	Process:	Output:	Outcome:
Phases of the education and training process	framework conditions and resources	Teaching and training	Results of learning	application of learning to professional situations
Curriculum specifications	Subject oriented syllabi	regulations on teaching methods	syllabi oriented on learning aims	qualification standards based on learning outcomes

In the eight countries under scrutiny, we looked at the specifications made in curriculum documents in order to characterize the steering approach underpinning the national VET systems. To that purpose, we referred to the model developed by Sloane and Dilger (2005).

Following the line of the learning process, Sloane and Dilger (2005) link the input, process, output and outcome of learning to the different elements specified in a curriculum (Table 3). It must be noted that all these elements have to be defined eventually in order to plan and implement learning activities. There are, however, multiple possibilities regarding the level at which decisions on the different elements of the curriculum are made. An input-oriented curriculum would, according to this model, specify the content and framework conditions of education such as duration, learning place, and knowledge body to be transmitted in the national curriculum. An outcome-oriented curriculum would instead specify the competences to be reached at the end of the educational process, leaving the selection of appropriate contents and educational settings to education and training providers at the local level. The two curriculum models correspond each to a different steering logic: One which is considered 'traditional' in public administration, emphasizing the conformity of practices to the regulative framework, whereas the other refers to New Public Management, emphasizing results and client-orientation.

In order to operationalize this model, the concept of 'learning outcomes' must be carefully defined.

In the European Qualifications Framework (EQF), learning outcomes are defined as 'statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined as knowledge, skills and compe-

tences' (European Parliament and Council of the European Union, 2008, Annex I). Speaking of curricula, this definition must be supplemented by admitting that we refer to intended learning outcomes. If learning outcomes are elements of a curriculum or standard, they are prescribed a priori, before the beginning of the learning process. They are therefore 'learning outcomes to be achieved by the learner' (intended learning outcomes) – and might differ from the actually achieved learning outcomes, which might encompass unintended learning outcomes as well (Euler and Hahn, 2004).

Empirical Findings

The comparison of curricula in Logistics in the eight countries examined in the study reveals that, beginning in the 1980's, learning outcomes have been introduced in all VET systems. The reasons for using learning outcomes in curricula, and the form and function of learning outcomes, have however been very different from country to country.

Learning outcomes have been introduced in qualification standards in all eight countries, as revealed by Table 4, which shows which typical elements of a curriculum are regulated at national level in the eight countries of the study, based on the distinction between levels proposed by Depover (2006). Four reasons mainly account for this general trend.

A first reason, which motivated countries such as France, the United Kingdom and Ireland to introduce forms of learning outcomes in their qualification standards in the late 1980's and early 1990's, was that learning outcomes were perceived as an instrument to enhance the link between VET provision and the labor market. National/Scottish Vocational Qualifications (NVQ/SVQs) were thus based on occupational standards defining precisely skills and knowledge required to perform well at the work-place. In France, learning outcomes (*compétences*) in the curriculum of the *Baccalauréat professionnel* were derived from occupational profiles describing the typical tasks and resources of an occupation. The same reason was later mentioned in Poland, Romania, Spain and Slovenia to define qualification standards on the basis of learning outcomes, that is at the management (administrative) level in the above-mentioned scheme from Depover (2006).

Another reason, put forward in Ireland, Poland, Slovenia and Romania, was the influence of the European Union, exerted for instance through financial support to reform programs, which aimed at making VET curricula compatible with instruments such as ECVET and the EQF. The necessity to implement ECVET is

Table 4 Elements of the curriculum (Areas marked with × signal the presence in national curriculum documents of specifications related to the corresponding element of the learning process.) (Source: own research)

Level	Elements of a curriculum	DE	FR	PL	SI	SP	NL	UK ¹	IE ²
Political	Overarching goals of VET	×						×	
	Key competences		×		×			×	×
Administrative	Qualification standards (competences expected at the end of the program)	×	×	×	×	×	×	×	×
	Outcomes/objectives at the level of training units	×	×	×	×	×	×	×	×
Practical-Pedagogical	Timetable (duration for each subject/module)	×	×	×	×	×			
	Learning place	×	×	×	×	×	×		
	Content specifications	×	×	×	×	×	×		
	Teaching methods and learning arrangements (*only guiding principles)	×*	×					×*	×*

¹ Scotland, National Progression Award and A Curriculum for Excellence. Curricula for Scottish Vocational Qualifications (SVQs) and curricula in other regions of the UK are different.

² FETAC award (further education sector). Curricula in pre-vocational training are very different in various aspects from those in further education

also mentioned in Germany, where different pilot projects have tested new forms of learning outcomes in VET curricula in the dual system.

Enhancing permeability through more flexibility has also been invoked as a reason for introducing learning outcomes, sometimes in the context of new instruments promoted by the European Union such as ECVET and the validation of infor-

mal and non-formal learning. Learning outcomes, when formulated appropriately, may provide the basis for dissociation between formal learning and certification, as is the case in the United Kingdom and France for instance.

Finally, learning outcomes have also been introduced with the explicit aim of reforming the governance of the VET system by ensuring the same quality standards all over the country, as in the case of Ireland and the United Kingdom.

At the level of qualification standards, differences among the countries exist concerning mainly the degree of detail of learning outcomes, the basis they refer to (tasks and functions, spheres of action, learning fields...), and the differentiation of learning outcomes in sub-categories (general vs. specific, skills vs. knowledge and competences...).

A much greater diversity exists among the countries at the political level, where only few countries have explicitly defined the overarching goals of VET, or the 'vision' underlying the curriculum, in terms of learning outcomes. Germany and Scotland offer such an example. The German concept of '*Handlungskompetenz*' and the 'Outcomes and Experiences' defined in the Scottish Curriculum for Excellence state the overarching goals of VET, based on the values and the specific understanding of competence of those societies.

A third use of learning outcomes in curricula appears to be the definition of key competences, or transversal competences. Referring – or not – to the European Framework of Key competences (European Parliament and Council of the European Union, 2006), most countries have adopted a list of competences formulated in terms of intended learning outcomes. Differences pertain here rather to the way of integrating them in the curriculum (as self-standing units vs. integrated in other units, with explicit references in unit plans vs. implicitly).

Input parameters are defined in every curriculum, understood in the broadest sense as encompassing also learning programmes defined by teachers and trainers or education providers on the basis of national standards. A major difference, from the point of view of governance, exists however between countries regarding the level of decision-making and the normative value of input specifications. On the one hand, Ireland and the Scotland make a strict distinction between learning outcomes, defined and assessed at national or regional level, and inputs, defined by VET providers. Although national authorities might provide support in the form of teaching and learning materials, or make suggestions concerning teaching methods and learning arrangements, education providers benefit from a large degree of autonomy concerning the contents of VET, time allocation, teaching methods etc. On the other hand, countries such as France specify in details the body of knowledge to be transmitted, learning arrangements and time budgets, leaving little autonomy to

public schools and training centres. Between these two extremes, countries such as the Netherlands have increased the autonomy of VET providers through curriculum reforms introducing learning outcomes in qualification standards.

Interpretation of the Results

The increasing use of learning outcomes in curricula can be interpreted, all in all, as a converging trend affecting all eight countries under scrutiny. Does this mean that a 'shift to learning outcomes' is taking place, Member States opting for outcome-oriented curricula? The results of empirical research do not confirm this hypothesis. Except for Ireland and the Scotland, all the countries make specifications concerning the input of the learning process in their national VET curriculum. We may thus identify two distinct curriculum models and a mixed model:

- The outcome-oriented model: the national curriculum has the character of an outcome-based framework curriculum, the decisions on inputs (i.e. contents, methods, duration, learning arrangements etc.) being left to VET providers at the practical level. This flexible form of curriculum might be 'enriched' (Braslavski, 2001) through suggestions concerning learning materials etc., which have, however, no binding character; inputs are defined in learning programmes which should ideally take into account the specific needs and requirements of the learners in order to help them achieve the intended outcomes specified in qualification standards. This model of curriculum represents a form of governance of the education system related to new public management approaches, defining the outcomes to be achieved but leaving the choice of the means up to providers, who are encouraged to take into account the particular needs and goals of the learners. It is the predominant model in Scotland and in Ireland.
- The input-oriented model: the national curriculum remains input-oriented, at least in formal education settings, where VET providers must comply with specifications concerning duration, place of learning and learning contents. Most continental European countries still feature an input-oriented curriculum.
- The mixed model: the learning outcomes defined in qualification standards are underpinned by content specifications, but most decisions concerning the planning of learning processes are left to VET providers. An example for this curriculum model is provided in the Netherlands.

Over the last twenty to thirty years, countries featuring an input-oriented curriculum model have introduced learning outcomes in their curricula, either at the

level of overarching goals/key competences, and/or at the level of qualification standards. This raises the question of the function of learning outcomes for the governance of these VET systems. How is the potential tension resolved between learning outcomes and input specifications, if both are exerting a normative constraint on VET providers? When it comes to actually planning the learning/teaching process for a specific group of learners, what is going to have priority: achieving the intended learning outcomes (by all means), or complying with input specifications (for instance in terms of time allocation and learning arrangements), even if they prove not to be conducive?

This dilemma is resolved, or avoided, through the use of learning outcomes in a different way than in Scotland and Ireland.

In Scotland and Ireland, qualification standards based on learning outcomes have a strong regulative function, providing the basis for final assessment and quality assurance systems. They are thus formulated very precisely, sometimes with an accompanying set of performance criteria, and they have to be measurable, as explicitly stated in the documents of the National Qualification Authority of Ireland.

In Germany, the concept of *Handlungskompetenz* has a pedagogical, rather than a regulative function: by defining the intended outcome of VET, it orients the development of all the other parts of the curriculum. It plays an integrative function and takes the first place in the curriculum hierarchy. It is formulated in a holistic and general way, not specific to any particular occupational profile and not directly measurable. In qualification standards and at the level of single units in the dual system, statements of what a learner should know, understand and be able to do after completion of the learning process is formulated in terms of learning objectives, which are not assessed one by one and which are formulated in an open way, not necessarily providing performance criteria. Interestingly, curricula based only on learning outcomes are being introduced in the framework of pilot projects targeting learners who didn't find an apprenticeship contract within the dual system – in that case, and although the same qualification is delivered at the end of the learning process as in the dual system, learning outcomes are formulated following different criteria: they are measurable and more systematically derived from occupational profiles². Similarly, learning units in exchange projects following the methodology of ECVET also require a re-writing of the learning objectives contained in dual system curricula as measurable learning outcomes. Sets of key competences, given the particular challenges linked with their evaluation, also have a rather pedagogical function. In France for instance, only some aspects of key competences are assessed at the end

² Pilot initiatives such as Jobstarter (<http://www.jobstarter.de/de/1217.php>) and DECVET (<http://www.decvet.net/>) provide some examples of such reformulated curricula.

of general education, but references to them are made in the subject-specific syllabi and formative evaluation is conducted in general education at primary and lower-secondary level.

Besides the regulative and the pedagogical-didactic function of learning outcomes, a third function can be identified. In France and Spain, and as a goal of current reforms in Romania and Poland as well, qualification standards based on learning outcomes provide the basis for the validation of alternative learning pathways (non-formal or informal learning). To some extent, they thus fulfill the same function as in Scotland and Ireland, by providing standards which allow for a diversity of learning programmes. In formal education, however, which is by far the most common route to qualifications, they play an ancillary role. As Eckert and Veneau (2000) showed on the basis of teacher interviews, the basis for planning learning processes in practice are content specifications (so-called 'associated knowledge') and past assessment documents specifications in the national curriculum concern the inputs as well – the input-character of the curriculum thus persists in spite of the qualification standards being written in terms of learning outcomes.

Learner-centred vs. Teacher-centred

A third dimension for the international comparison of VET curricula pertains to the pedagogical approach underpinning the written curriculum.

Theoretical Background/Description of the Model

Curriculum reforms of the past thirty years must be placed in the context of new developments in cognitive sciences and in pedagogy and didactics.

Three main theoretical streams can be distinguished, which have provided a definition of learning and reflected on the consequences of that definition on the curriculum: behaviourism, cognitivism and constructivism.

Behaviourism is a theoretical approach in psychology that focuses on the study of outwardly observable behaviour as reactions to a stimulus. The behaviourist approach points out the clear identification and measurement of learning and the necessity to produce observable and measurable outcomes (Adam, 2004). The impact of behaviourism on curriculum design becomes apparent in the United States Office for Education's call for writing syllabi in terms of competences, defined as measurable behavior patterns, and the subsequent popularity of curricula consisting

of endless lists of 'competences' in the 1960's and 1970's (Jonnaert, 2009, p. 27). This approach highlights performance as the ability to reproduce routinized behaviours, in a way which can easily be linked to the Taylorian organization of labour.

Following Jonnaert (2009), the understanding of the concept of 'competence' changed under the influence of cognitivism to become more contextualized and integrated. Instead of explaining human activities only by means of stimulus and response, cognitivism focuses on the mental activities of the learner and tries to open the 'black box' to understand how people learn. This led to an increasing attention paid to cognitive processes and different forms of knowledge underpinning performance. Both theories, nevertheless, remain governed by an objectivist view of knowledge, i.e. (learning) objects exist independently of the learner's mind respectively of his individual constructions. The goal of instruction remained the same: the transfer of knowledge to learners in the most efficient way.

According to Dubs (1998), a change of paradigm can be observed in the last years, with the increasing popularity of constructivist teaching and learning forms. According to constructivism, the learner's knowledge is grounded in his perception of the physical and social experiences as reproduced by his mind. Therefore, constructivism is descriptive rather than prescriptive; it does not prescribe rigid outcomes, rules or procedures for designing a learning environment (Anthony, 1996). Its main distinctive feature is the shift in the view of the learner which it implies, from a passive recipient of knowledge to an active constructor of knowledge. In this context, self-directed learning and complex learning situations are key concepts, with implications for teachers and trainers, whose role is to prepare learning arrangements meeting the learner's needs and become an advisor in the learning process.

On the basis of these three theoretical streams, we suggest to distinguish between two approaches to teaching and learning. The first approach, which basically relies on a behaviourist concept of learning, can be labeled 'teacher-centred'. Its central feature is the instruction-type of learning setting, where the learner reproduces pieces of knowledge or behaviours as instructed by the teacher or trainer. Learning is arranged in discrete subjects with fewer explicit links to 'real-life' contexts, while evaluation has the primary goal to control performance in tests. The 'learner-centred' approach, on the contrary, refers to the constructivist paradigm. It emphasizes active learning, an integration of theoretical and practical learning in learning arrangements as close as possible to 'real life' situations, and the use of evaluation for learning purposes.

The research being focused on written curricula, indicators had to be developed

Table 5 Indicators of teacher-centred and learner-centred approaches in curricula (Source: own research)

Criteria	Teacher-centred	Learner-centred
Assessment	Summative	Formative and summative
Curriculum integration	Discrete subjects	Interdisciplinary approach
Learning methods	Instruction	Active learning
Work experience	Separation between theory and practice, application in practice of theoretical learning	Experiential learning, integration of theory and practice

for comparing national curricula and identifying the dominant approach characterizing each one.

Following indicators were used for the criteria presented in Table 5:

- Assessment methods recommended or prescribed in the curriculum;
- Criteria for the clustering of competences;
- Direct references to interdisciplinary work;
- Recommendations, suggestions or prescriptions concerning learning methods and approaches
- Learning places and recommendations/prescriptions for linking practical and theoretical knowledge.

Empirical Results

As the study only took into account the planned curriculum, it goes without saying that results presented here do not provide any information on the actual teaching and learning practices in schools and companies. The validity of the results is further limited to the Logistics sector, in which the case study was conducted – possible divergences between different sectors were not taken into account. A specific challenge arising at this point is the different role played at national and regional/local level by actors in curriculum development. Whereas French curricula are very explicit on assessment methods, teaching methods and learning arrangements at national level, Ireland and the Netherlands, for instance, leave these matters entirely to the decision of education and training providers in further education. The results

presented here are based only on national curricula, due to the choice to stick to an international comparison at national level.

The results of the comparative analysis of the curricula in Logistics in the eight countries examined in the study revealed a high degree of consensus about the principles of learner-centred teaching and learning, but very different approaches to implement such approaches through curricula and learning programmes.

Taking the criteria of integration between theory and practice, the differences can be illustrated through the following curriculum elements in some of the countries:

- Germany: in the dual system of school-based and work-based learning, the integration of theoretical and practical learning is facilitated through the organization of school-based learning in 'learning fields' which reflect the work-process; assessment methods for final assessment use a simulation of real-life processes;
- France and the Netherlands: internship periods are prepared and reflected in a dedicated course; project-based learning aims at reproducing 'real-life' work processes at school;
- Poland: companies participate to the development and delivery of school curricula; case studies and workshop training are increasingly used to simulate working environments;

The extent to which active learning is encouraged by curricula varies depending on the scope of national curricula. In all eight countries under scrutiny, the choice of teaching methods is left to the responsibility of teachers and pedagogic teams, but national authorities use different means for fostering active learning practices.

- Scotland: the 'Curriculum for Excellence' provides a conceptual framework for planning learning processes centered on the learner's needs. Theoretical and practical guidance for teachers and trainers reflect a strong orientation towards constructivist approaches and active learning methods.
- France: accompanying materials for teachers, developed by the national education administration, provide support to teachers for implementing more individualized learning arrangements.
- Germany: curricula for the school-based part of the dual system include a standard introduction, in which the concept of '*Handlungskompetenz*' is explained and related to teaching and learning practices.
- Spain: funding for innovative practice, and a National Prizes for Educational Research and Innovation have been created to modernize pedagogic practices.

The trend away from subject-based syllabi to more interdisciplinary and work-process oriented curricula is also visible in most countries, where it is closely linked to modularization. Interesting examples of interdisciplinarity can further be found especially in countries where initial VET also encompasses a part of general education, as is the case in Germany and France. The already mentioned concept of 'learning field' aims at a better integration of knowledge from different disciplines in German school-based curricula. In France, the concept of interdisciplinarity is discussed under the perspective of enhancing the transfer of school-knowledge into work situations. Although the curriculum is still organized in subject-based courses, a multidisciplinary project course, the PPCP (*Projet Pluridisciplinaire à Caractère Professionnel*), was introduced in 2000 with the aim of strengthening transversal competences. In the Netherlands, the curriculum is organized in 'core tasks' reflecting the work process.

Curriculum documents were found to address the question of assessment methods primarily in the context of summative assessment. It is only in Scotland, that formative assessment becomes an object of concern for national authorities. The program Assessment is For Learning (AiFL) focuses on sharing learning outcomes with pupils, using dialogue within the classroom promoting thinking, ensuring constructive feedback on pupils to improve future learning, and equipping learners with the skills and understanding to engage in peer- and self-assessment (Bryce and Humes, 2008, p. 432). In other countries, experts interviewed in the framework of the case study on Logistics mentioned the increasing importance of formative evaluation, but their statements about current practices and discourses were not mirrored in the written curriculum.

Interpretation

Summarizing the empirical findings, it is possible to identify a trend towards more learner-centred approaches in VET curricula in the eight countries examined in this paper. The diversity of measures and instruments to implement what we identified as the main features of this approach demonstrate, however, the limits of a comparative analysis of written curricula at the national level. Although teaching and training practices in different countries might be very close in the end, the curricular basis is very different.

To overcome the limitations posed by different systems of curriculum development and steering mechanisms in comparing learning and teaching approaches, the Cedefop study on learning outcomes also examined curriculum implementation in two German vocational schools and one regional VET provider in the Netherlands.

Teacher interviews and student surveys were conducted to identify the teaching and learning methods used to deliver the Logistics curriculum. As a result, it appeared that practices differ greatly even within the same country. This can be explained by the fact that national curricula are but one source for planning learning processes in teachers' eyes. Learning materials, assessment practices and informal exchanges with peers and partners from industry also represent important references for shaping daily practices. Further factors mentioned by the interviewees as having an influence on the teaching and learning approach are the training and professional background of teachers, the local strategy of VET providers as well as available resources and networks with companies or other stakeholders.

The existence of multiple factors influencing teaching and learning practices raise the question of the link between the use of learning outcomes in curricula and the teaching and learning approach. No direct relationship can be identified on the basis of our data between the introduction of learning outcomes, respectively the shift to an outcome-oriented steering modus in VET, and the implementation of a learner-centred approach. But the debates surrounding the concept of competence suggest that there is a strong link at the conceptual level between the different functions ascribed to learning outcomes in the curriculum and the political will to foster learner-centred approaches. At least two aspects of this link emerged as crucial in the empirical research and need to be further analyzed:

- The link between a definition of overarching goals of VET in terms of competence and a holistic vision of learning. The concept of '*Handlungskompetenz*' in Germany, the Common Base of Competences in France, and the definition of the 'four roles of learners' underpinned by key 'experiences and outcomes' in the Scottish Curriculum for Excellence emphasize the integrated character of learning processes. These concepts developed in curriculum documents have implications in terms of learning arrangements and teaching methods, which are explicitly developed in VET legislation or in supporting materials for teachers and trainers. They are especially related to interdisciplinary approaches, situated and project-based learning.
- The link between qualification standards based on learning outcomes and the relationship between work-based and school-based learning. In school-based systems, such as France, the Netherlands, Poland or Romania, learning outcomes were introduced in curricula with a view to facilitating cooperation between VET providers and companies. In the wake of these reforms, internships periods have been integrated in the curriculum and different measures put in place to enhance the transfer of competences from a school- to the work-context.

The exact nature of this link between the concept of competence, learning outcomes and learner-centred approaches based on the constructivist paradigm has not yet been fully elucidated. This task requires indeed a very thorough examination of national discourses, as existing comparative research suggest that the understanding of the key concepts is deeply rooted in the context of national VET systems.

Conclusion

Summarizing the findings of the comparison between curricula and curriculum development processes in VET in eight European countries, it is possible to identify three broad trends affecting all these countries despite the still prevailing diversity among national VET systems:

- Concerning the structure of the curriculum: A tendency to adopt new forms of modularization combining features of supply- and demand-oriented curriculum models;
- Concerning the steering logic underlying the curriculum: The introduction of some elements of outcome-oriented steering in traditionally input-oriented curricula;
- Concerning the pedagogic-didactic approach embodied in the curriculum: An increasing commitment to learner-centred approaches.

The common ground for these trends seems to lie in the same struggle of national VET systems to find a new balance between the opposed or at least conflicting principles of regulation and deregulation, standardization and individualization, flexibility and transparency. The need to better relate the VET system to the labour market as well as to the learner, the acknowledgement of new developments in cognitive sciences and psychology, the general shift to new modes of governance and, last but not least, the influence of European policies for increasing lifelong learning and mobility can be cited among the driving forces behind these trends.

With regard to these common trends, we should not, however, be too quick in concluding that national VET systems in Europe are converging. A detailed analysis of each of these trends reveals that each country develops its own original ways of meeting the challenges. Coming back to the four levels of curriculum studies defined by Adamson and Morris (2007), it seems worthwhile extending international comparative research in order to find out how curricula are enacted and experienced

in VET, and what this might have to do with the features of the planned curriculum and its underpinning 'ideology'.

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VET Qualifications versus Bachelor Degrees? Recruitment at the Intermediate Qualification Level – Case Studies from Germany, England and Switzerland

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A joint project of the Federal Institute for Vocational Education and Training (BIBB) and the University of Zurich involves an investigation of company recruitment strategies for intermediate level employees in three countries: Germany, England and Switzerland. The reasons for recruitment decisions are investigated to shed light on which qualifications best cover the requirements companies have for certain activities. The objective was to identify the strengths and weaknesses of recruitment from vocational education and training (VET) compared to graduates for a certain activity profile as well as to facilitate discussion about equivalences between qualifications among the three countries. In this article some findings of the project are presented.

Objectives or Purposes

The main question of our project is if companies in future will have greater faith in graduates than in holders of VET qualifications and if they will differentiate their recruitment strategies by country or sector. The project takes an international comparison of the recruitment behaviour of companies as a vehicle for focusing on the interface between the educational and employment systems. Individual qualitative case studies form the basis for the international, cross-occupational and cross-sectoral reconstruction of company recruitment strategies and decisions in the context of changing VET pathways Germany, England and Switzerland.

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The aims of the comparative study were to examine aspects of the effectiveness of VET (as against graduate recruitment) in intermediate skills formation in the three countries and to facilitate a discussion on the strengths and weaknesses of different approaches and the extent to which different qualifications can be regarded as equivalent.

International Comparisons of Recruitment Strategies/Behaviours

Only a very small number of studies comparing international company recruitment strategies are in existence, although some investigations touch on aspects of recruitment.

The general perception that companies adapt their work organisation, personnel recruitment strategies and training programmes to fit the respective output from educational systems is one which has long held sway within internationally comparative VET research. In a Franco-German comparative study, Maurice, Sellier and Silvestre (1986) (see also Müller and Shavit, 1998) take the view that the way in which qualifications are 'produced' and subsequently used by companies has led to complex and system-specific relationships between qualifications and activities/jobs. On the other hand, growing similarities between educational systems are being identified, arising from the convergence of social systems (Benavot et al., 1991) or which are viewed as having resulted from a rationalisation in production, international competition and an increasing number of companies operating on a multinational scale (Treiman, 1970). Festing (2004) emphasises the culturally independent validity of certain behaviours, existing differences being ascribed to different organisational structures in some cases.

Within the scope of a project involving working groups at twenty universities in nineteen European countries, a strong degree of heterogeneity in respect of recruitment practice in Europe was identified (Brewster et al., 2004), although the focus of the study was on how recruitment took place rather than on the issue of the prior learning of the applicants.

Company training strategies form the object of investigation in a further joint German, English and French comparative study, which finds that it is scarcely possible to demonstrate any significant country effect in respect of the proportion of skilled workers within companies and available qualifications. The study concludes that although training pathways may be of differing length, companies operating under various institutional conditions develop their own routes to put the necessary skills potentials in place (Backes-Gellner, 1996, p. 87). As far as the banking sector

is concerned, the changes in corporate organizations which took place in Germany and England in the 1990's as a result of the intensification of global competition led to the identification of a trend towards recruitment of more highly qualified applicants (Quack et al., 1995, pp. 13–18).

A wide range of sector-specific German/British comparative studies focussing on the relationship between productivity and differences in educational programmes have been conducted (Campbell and Warner, 1991, on the micro electronics industry; Prais et al., 1991, for the hotels sector; Steedman and Wagner, 2007, on ICT skilled workers).

Mytzek and Schömann (2004) took four case studies relating to various sectors within trade and industry as the basis for a study into the significance of transparency within the recruitment process with regard to cross-border mobility in Europe. The investigation encompassed companies from the financial sector, the automobile industry, the health sector and the information and technology branch in nine countries. Aspects highlighted included how recruitment took place and the opportunities for German job applicants on labour markets abroad.

Comparing German and English Vocational Qualifications

As far as comparative investigations of German and English qualifications are concerned, one study (Fulst-Blei, 2003) is particularly worth mentioning here: it is an exemplary approach to determining the positioning of a German VET qualification within the European 5-level framework of 1985. This study was based on a comparison of the effectiveness of an English and Welsh vocational qualification (GNVQ 'Advanced Business') and the German vocational qualification of 'Industrial clerk' and found that both qualifications corresponded to the requirements of Level 3 of the framework (Fulst-Blei, 2003). This contrasts with the alignment of the German qualifications in the framework of 1985, when German initial vocational education and training was by definition aligned to Level 2: '... including apprenticeship training'.

Acceptance/Applicability of Academic and Vocational Qualifications

The employability of higher education graduates is currently a topic which is very much on the agenda in England (Little et al., 2003). The past 15 years have seen

a development towards 'mass higher education', and this has meant that the United Kingdom is now above the OECD average for the proportion of higher education graduates it produces (Moreau and Leathwood, 2006).¹ At the same time, a critical investigation has been undertaken of the development of NVQs and the degree of acceptance they enjoy amongst companies (Roe et al., 2006). A survey of 1,523 employers resulted in an extremely mixed picture of the significance of NVQs and company acceptance.

The critical factor in the competition to secure the services of high-ability young people in Germany will be the attractiveness of the career perspectives offered by a vocational qualification and the nature of the positions Bachelor graduates will occupy on the labour market (Weiß, 2006). The signals being sent out by trade and industry in respect of acceptance of Bachelor qualifications are contradictory.

A study conducted by the German Institute for Business Research (Werner et al., 2008) found that most companies in Germany value such aspects as the generalist training provided within Bachelor courses of study and thus view the Bachelor degree as a fully fledged academic qualification. It seems that most companies do not see a direct competition between graduates and people with VET qualifications in Germany. Companies rather accord Bachelor graduates the same career opportunities as other higher education graduates (Bergs and Konegen-Grenier, 2005). In general terms, the study suggests that the acceptance of Bachelor and Master diploma increases with company size.

When asked how much they know about the new courses of study and about their recruitment behaviours towards Bachelor graduates, 11.5% of companies surveyed stated that they employed bachelor graduates (Konegen-Grenier, 2004, pp. 11–14). One third of companies interviewed put Bachelor graduates at the same level as those who had completed upgrading training, a further third accorded them equal status with higher education graduates and 7% saw them as at least having completed the equivalent of initial vocational education and training (*ibid.*). On the other hand, a 'certain aloofness' is being identified on the part of the companies. Doubts are being expressed, for example, whether it is possible to impart competences which are comparable to the traditional German 'Diploma' course of study within the six semester Bachelor course (Habermann and Lohaus, 2006). In a similar study on higher education recruitment, 50% of companies surveyed stated that they expected Bachelor graduates to have to undergo follow-up training (*cf.* Campus Career Network, 2006, pp. 13–16). In overall terms, the Bachelor degree

¹ Yet, part of the expansion of HE in the UK is driven by overseas student demand, especially from China and India.

does not yet appear to have secured a clearly allotted place within the employment system (Minks and Briedis, 2005; Möhrle, 2006).

Methods, Techniques, or Modes of Inquiry

The wide range of training strategies and control mechanisms in place in England compared to Germany (an approach based on employability versus regulated occupations) made the former a prime candidate for study. England also has a traditionally developed three-level system within HE (Bachelor, Master, Doctorate), which is just being implemented in Germany (the so-called 'most different system' design, as defined by Georg, 2005). Switzerland, on the other hand, is considered to be one of the countries in which vocational training plays a primary role within the educational system, meaning that the starting position is comparably similar to that in Germany ('most similar' design).

The three sectors for investigation in the project were chosen to represent different branches of industry as well as because major companies in each of the sectors operated in each country: they employed intermediate (technician) level staff in banking, chemicals and mechatronics fields. Companies selected for the case studies had to have large numbers of employees and had to operate on a worldwide level. Three companies were chosen for the study from the field of banking, one with headquarters in Germany, one in Switzerland and one in the UK. From the mechatronics sector two companies were selected, one with headquarters in Germany, one in Switzerland, the same goes for the companies in the chemical sector. All selected companies had to have a branch office in all the three. All selected companies should have some experience with applicants from the vocational education system and also with bachelor candidates.

The total of 38 interviews in the companies were carried out in two phases, each time returning to the same companies. The focus of the first phase was on interviewees from the Human Resources departments (HRDs) of the regional subsidiaries. The second phase of interviews was conducted primarily with managers in operative divisions or heads of apprenticeship training departments. This proved a good way of eliciting assessments of a more corporate strategic nature, on the one hand, and practical experience from daily work alongside staff members with varied educational backgrounds, on the other.

Findings

Assessment of Vocational Education and Training

All in all, it was found that all the interviewees in the HRDs in England have theoretical knowledge of the possibility of having formal vocational qualifications. This type of qualification, however, plays only a very small or no role for them. The situation is somewhat different in the case of the surveyed banks and chemical enterprises that have a German headquarters. These respondents had a positive picture of dual vocational training and tried to foster this type of training in England as well. The respondent at a bank that is particularly active in the area of vocational training recommended that individuals with formal vocational qualifications should go on to study a higher national diploma and then a degree. This would put vocationally-qualified employees on par with employees who hold a Bachelor's degree, or even give them advantages over the latter:

Yes, I will be careful to say that when one of our vocational trainees finally gets their higher national diploma and then their degree, then that will take them three-and-a-half to four years. Then they are exactly the same as a graduate. Then, if a vocational trainee moves into a front office, you won't spot the difference. So they know more about the bank because they have been there three-and-a-half or four years. (CEX 25)²

One of the interviewees passes a similar comment on his experience with the trainees' knowledge after their apprenticeship: '...they know so much about how the bank works most are taken on permanently' (CB 48–51). One interviewee from a chemical company would assign vocationally-trained employees to work which requires a 'pragmatic and more structured approach'. This person also made the critical remark that there are too many graduates in the UK who are not up to academic standard, noting that there are many cases where graduates are equivalent to 'higher-level vocational people' (BUX 63). The vast majority of interview partners in the second round made similar comments. They very much related to vocational qualifications, either via their own educational background or their concrete workplace experience in the company, and particularly appreciated the knowledge of vocationally-qualified staff about the company and about work processes in their part of it.

The experience with vocationally-qualified staff is far more pronounced in Germany and Switzerland, both in human resources management and at the operative level of the company. Nevertheless, the same differentiations can be made.

² The companies are made anonymous.

A widespread assessment made by German interviewees is that people who have earned a formal vocational qualification are considered to have less theoretical training whereas individuals holding a Bachelor's degree – with the exception of a Bachelor's degree from a college of advanced vocational studies (*Berufsakademie*) – are thought to lack practical experience (CDR 317). Thus, an interview partner from a Swiss bank stated that, in his experience, a Bachelor without work experience needs an induction phase of a few months to half a year. For this purpose the company offers 'university induction modules of 9–18 months duration' (CHCSHR 322–323).

The following quotation illustrates the differentiation that is made in Switzerland:

I believe that the way they work is fundamentally different. Someone with a Bachelor's degree is academically-oriented, research-oriented in their work when we go in the direction of universities of applied sciences, or then in the direction of vocational training, then the approach tends to be more practical. In other words, scientific research is not as important. Working in scientific ways is not a primary focus. (NCK 190–195)

'Craftskills' and 'refreshingly pragmatic approaches' are cited as advantages offered by employees who have completed vocational training.

Assessment of Bachelor's Degrees

In June 2004, at the initiative of the *Stifterverband* (German Trade and Industry Association), the Centre for Higher Education Development and the Confederation of German Employers' Associations ('BDA'), 15 HR directors of large companies published the joint declaration 'Bachelor Welcome'. The signatories expect the reform to bring with it stronger practical orientation, shorter study periods, greater internationalisation and improved international comparability. At the same time, the signing companies are ensuring future Bachelor's degree graduates attractive job-entry opportunities and career options. This declaration was renewed and augmented in 2006 and 2008. The version from 2006 specifies in detail the companies' requirements of Bachelor's degree programmes. Among other things, it calls for 'faster and more consistent conversion to the tiered higher education structure in all courses of study, in which every Bachelor's degree must fundamentally qualify the holder to begin practicing an occupation' (BDA 2010); another expectation that is repeatedly expressed in the interviews, but is not always affirmed by concrete experience.

Essentially the comments of interviewees in the project have a tendency to class Bachelor's degrees with other academic degrees. Various studies that have looked into the employability of Bachelor's graduates come to similar conclusions. (Bergs and Konegen-Grenier, 2005; Briedis et al., 2011; Werner et al., 2008).

For example, in Germany, the university Bachelor's degree, Master's degree and Diplom are given equal treatment in connection with, for example, trainee or graduate programmes for persons with one of these types of degrees (see also 1.5 Typical career paths). Apparently the kind of educational institution where the individual earned the particular degree is important here. Consequently, in Germany, holders of a Bachelor's degree are expected to have a clear academic profile and be capable of academic/scientific work. Doubts whether Bachelor's degree programmes meet these requirements were noticeable in some cases. Expectations were formulated:

... a graduate holding a Bachelor's degree is an academically-trained worker who must be familiar with the use of scientific methods for solving problems and must be able to apply and progressively develop these methods in appropriate ways. When an individual is unable to do so, he is not a 'Bachelor' and we consequently do not hire him. Since we have other segments from the vocational training system, since we have other segments via the experience and know-how of our employees, we don't need him. (BDW 127)

It was said that persons who had earned a Bachelor's degree needed a breaking-in period of more than 18 to 24 months until 'they can walk on their own' (ADB 71).

According to the companies surveyed, the Bachelor graduates from universities are still very young and have no practical experience. One company in Switzerland even had reservations about offering such individuals a one-year period of practical training following their graduation from a regular university. This company felt it would be better to integrate a period of practical training into Bachelor's degree programmes – or possibly even interrupt one's university studies to complete a period of practical training (CSW 210–215). Some of the participating firms in Switzerland noted that Bachelor's degrees from universities of applied sciences are in competition with Master's degrees from regular universities (CSW 210–215).

Overall, the strong differentiation between different Bachelor's degree programmes in Switzerland was very striking, and demonstrates that those interviewed have a good knowledge of the different educational courses and the relevant competence profiles of graduates. The high regard for Bachelor's programmes at universities of applied sciences, which always confer a double qualification (see two below), came through very clearly. In Germany, this differentiation was not made as frequently or emphatically. Relatively positive comments were made about the opportunities for individuals with vocational qualifications to gain further qual-

ifications at a university of cooperative education (*Duale Hochschule*) or college of advanced vocational studies (*Berufsakademie*).

In general, companies in Germany and Switzerland are found to be expectant and partly sceptical about university Bachelor graduates (for Germany see also: DIHK, 2011). While their short comings are readily seen, it remains less clear where their strengths lie. In comparison to initial vocational training or a degree programme at a college of advanced vocational studies (*Berufsakademie*) or a university of applied sciences (*Fachhochschule*), which can also culminate in a Bachelor's degree, a university-based Bachelor's degree course offers a low proportion of work experience; on the other hand, in comparison to a Master's degree course it only lays the foundations of an academic education. In these respects, the labour market appeal of the Bachelor qualification is somewhat limited. This is reflected in students' own plans: a survey of Bachelor's students in Germany in the 2009/10 winter semester found that 68% of university students wanted to continue onto a Master's programme, in contrast to 44% of their peers at universities of applied sciences (Grützmacher et al., 2011).

Assessment of Higher Vocational Education, Dual Study Courses

Companies in Germany reported very positively on their experience with graduates – in other words, holders of a Bachelor's degree – from colleges of advanced vocational studies. Large segments of such degree programmes are conducted in actual companies. The respondent from one company spoke of a 'hybrid' which 'belongs to vocational training' (CDR 169–177; ADB 155–161). Such graduates play a large role in companies' management planning. Companies value the fact that these individuals already have ties to the company and have gathered practical experience there. One company in Germany has steadily expanded its collaboration with colleges of advanced vocational studies. It reported that a number of its divisions had a strong demand for graduates from these schools. One participating company in Germany also has considerable experience with graduates from dual study courses that combine academic studies with in-company training. This even appears to be the priority field for the company's recruitment activities: 'Up to 99% of our recruits are persons who earned a Bachelor's degree that involved practical training in our company' (TDS 87–94). Due to the involvement of the company in these degree programmes, they do virtually no external recruitment. They train their recruits themselves.

(CBR 21) There are 27 such university offers (e.g. from Saarland University in Saarbrücken and the University of Paderborn). Programmes are offered in the fields of management, banking/finance, insurance, civil engineering, informatics as well as electrical and mechanical engineering); over 300 dual courses of study are currently offered at universities of applied science; approximately 170 dual courses of study were documented at colleges of advanced vocational studies (*Duale Hochschulen*) in Germany (BIBB, 2010b).

The main characteristics of dual courses of study:

- In addition to the university as a learning location (at colleges of advanced vocational studies: study institution) the course of study also includes the learning location enterprise as a systematic element.
- At the learning location enterprise, learning takes place within the scope of work processes.
- The student and the enterprise are bound by contract (employment/training contract).

In many *Länder*, this contract is a prerequisite for admission to a course of study at the relevant university/college of advanced vocational studies.

A cooperation agreement (contract) exists between the enterprise and the university/college of advanced vocational studies. This agreement regulates at minimum the coordination of learning phases in the enterprise and the university as well as admission to the course of study or university

Comparing 2010 with the previous year, the total provision of dual study courses rose by 12.5% and the number of student places increased by 6.1% (BIBB, 2010a). Overall the number of new students at higher education institutions rose by 4%. (Statistische Ämter des Bundes und der Länder, 2009). In Switzerland, double or hybrid qualifications are viewed as the ideal solution in all sectors because they satisfy both criteria for a top-flight education. In other words, they signal an education that is both academic and practice-oriented. Accordingly, the respondents in Switzerland strongly differentiated between a Bachelor's degree from a university of applied sciences – nearly all persons who have earned this type of degree have already completed formal vocational training (in contrast to their counterparts in Germany) – and an academic Bachelor's degree from a regular university (DCA 146–159; CSW 174–177; NCK 190–195). Due to the fact that they have practical experience as a result of their double qualification (vocational training plus a Bachelor's degree), graduates from universities of applied sciences are classed with vocationally-trained people. In one case however they are ranked even higher than individuals who have earned a Bachelor's degree from a regular university

(TCL, 138–41; 72–83). In one company in Switzerland university Bachelor graduates are not hired at all (CHCSL, pp. 100–5). The companies surveyed regard them highly and employ them in large numbers. Practical experience is clearly considered a strength. Since one of the admission requirements to Swiss universities of applied sciences is evidence of a vocationally-oriented qualification from the general educational sector, e.g. basic vocational training with a professional baccalaureate (*Berufsmatura*), or a general educational baccalaureate (*Matura*) with supplementary qualifications, these school-leavers are generally older, and thus more mature, in the interviewees' experience (CHNHR, pp. 178–93). In some cases, staff are actively supported in progressing to a Bachelor's qualification at a university of applied sciences (CHCSHR, pp. 100–8).

In the UK, almost all interview respondents cited 'internships' (UKBAR AB 6) as the main way to provide valuable work experience and potentially a fast-track offer to one of the interviewed company's graduate programmes, e.g. there are summer internships that are designed to ensure new recruits 'reach their full potential, working towards internationally recognised professional qualifications and developing an excellent understanding of how best to meet clients' needs'. By means of the instrument of internships, potential applicants are recruited direct from the universities in order to prepare them, even before they graduate, for the requirements in the companies, and in order to have first pick of candidates with a view to recruitment. This is a kind of supplementary qualification process by the companies which, despite being managed and organised in a different way from the German and Swiss models, is nevertheless an equally suitable means of providing practical experience as a complement to an academic education.

Conclusions

The companies surveyed do not consider vocationally-trained applicants to be in competition with applicants who hold a Bachelor's degree. Not only the envisaged career path but also continuing professional development within the respective company is different, depending on whether the individual is vocationally trained or has earned a Bachelor's degree. This correlates with the expectations of persons who hold a Bachelor's degree.

It is interesting that a strong differentiation is made in Switzerland between a Bachelor's degree from a university of applied sciences and a Bachelor's degree from a regular university. The double qualification offered by graduates from a university of applied sciences is very positively rated and is accordingly credited

during recruitment. In Germany this differentiation is made between persons who earned a Bachelor's degree from a college of advanced vocational studies (whereby in some cases the respective company was actively involved in the particular individual's training) and persons who earned their Bachelor's degree at a university. The first group is perceived as very vocationally-oriented and practice-oriented. In the case of the second group, there was uncertainty in some instances over what competences and skills these persons actually had to offer. It was not clear what the positive unique feature of this type of education is. Although persons who hold a Bachelor's degree from a university are currently given access to widely-offered trainee and graduate programmes on the strength of their degree, there is however doubt whether, after completing what is presently a 3-year degree programme as a rule, such persons actually have the qualifications and tools needed for working at an academic/scientific level. In addition, many holders of a Bachelor's degree from a university have only rudimentary practical experience. Due to their 'education portfolio' such individuals are therefore at risk of being at a disadvantage vis-à-vis graduates from a college of advanced vocational studies in Germany or a university of applied sciences in Switzerland during recruitment.

If the intention for the future is to preserve vocational education and training as an attractive educational pathway for high achievers in Germany and Switzerland, on the one hand this will necessitate better permeability into the higher education sector. On the other hand, the interviews from this project clearly show that, particularly in the middle levels of companies, there is a demand for double qualifications which have both a vocational and an academic component. Such an 'academic shift' in vocational education and training, in the sense of initial vocational training leading into successive university-level study, takes a back seat compared with integrated courses like the model of the professional baccalaureate (*Berufsmatura*) or higher (tertiary-level) vocational education in Switzerland. No substitution of vocational education and training with Bachelor's graduates could be ascertained from the interviews, but the need for 'higher vocational education' was certainly made plain.

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Perceptions of Science and Technology in Developed and Developing Countries: Challenges for Technical and Vocational Education and Training (TVET)

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Science and Technology in Developed and Developing Countries

Access to and the use of technology in developed and developing countries differs greatly. Technical equipment such as transport systems, home appliances and personal computers are part of daily life in developed countries whereas this is not always the case in less industrialised or developing countries.

The economic well being of industrialised countries relies on the availability of suitably qualified engineers to develop new technologies. Similarly there is a need for engineers and technicians in developing countries to contribute to raising from the standard of the country's progress and to improve the quality of peoples' lives.

According to the OECD, 'the demand for engineers and scientists is worldwide booming' (OECD-Observer, 2010). The European Commission warns of crises in the flow of human resources for science, engineering and technology (European Commission, 2004). It is against this backdrop that we ask the question whether young people can imagine themselves working in Science and Technology (S&T) in their future careers.

One might assume that young people who have easy access to technology might show a stronger inclination to work in this field. Stereotypically one might also expect women to show less interest in S&T than men. This paper challenges these

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assumptions and analyses the career aspirations of young people with regard to S&T in developed and developing countries.

Career Decisions and Pathways

Research shows that young people place a high value on technology and appreciate its importance for the wider society. Nonetheless there are differences between developed and developing countries (Sjøberg and Schreiner, 2005, p. 10).

Sjøberg and Schreiner analysed the career aspirations of 15 year old students and their perceptions of S&T in over 30 countries in the Science and Scientists (SAS) and Relevance of Science Education (ROSE). These studies reveal remarkably different trends in developed and developing countries. One of their research findings is shown below in Fig. 1.

The left hand side of the diagram shows students interest in becoming a scientist while that on the right hand side shows their interest in working in technology. The students' responses were recorded on a 4 point Likert scale. The scale defines 1 as 'I disagree' and 4 as 'I agree'. The bold line in the middle indicates neutral

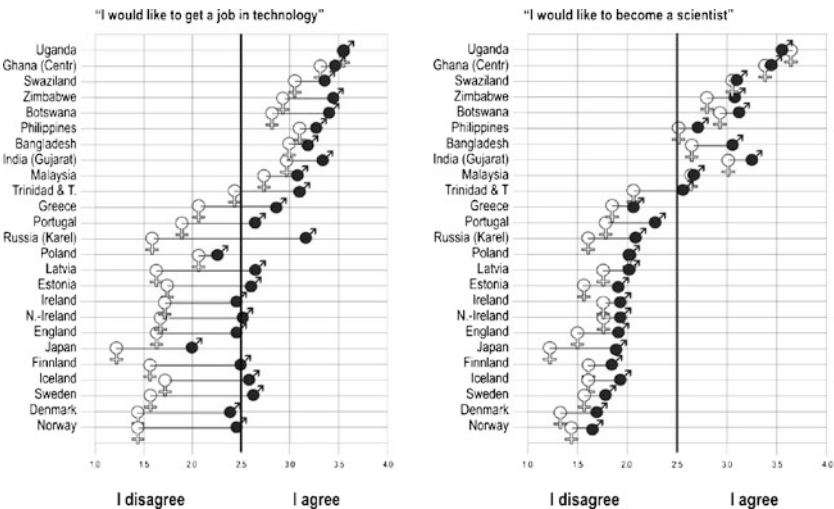


Figure 1 Career aspirations of 15 year old pupils (Source: Sjøberg and Schreiner (2005, pp. 12–13))

responses. These findings show significant differences between developed and developing countries. The aspiration to get a job in S&T was high in the developing countries whereas the students from OECD countries demonstrated reluctance to enter these fields with average responses of less than 2 on the 4 point Likert scale.

We can also note clear gender related differences, especially with regard to working in technology, a prospect in which girls are far less interested. The research findings of Sjøberg and Schreiner also show that the different aspirations of males and females are linked to the country's development status. This was particularly so in the area of technology where responses from the industrialised countries demonstrated a clear gender bias. The responses from the young people in the developing countries show less explicit gender bias.

In order to explain these results the authors explore different aspects of career choices and discuss these in greater depth.

Factors Influencing Career Choices and Decisions

The lack of interest expressed by young people to get a job in S&T suggests that in some countries there may be negative attitudes towards S&T. Such assertions are sometimes the subject of public debate. The afore mentioned ROSE study and some national studies, such as 'Nachwuchsbarometer Technikwissenschaften' from the German Acatech-Association support this hypothesis. We analyse factors which might influence attitudes in the following section.

Perception and Interest in S&T

A number of studies (e.g. Eurobarometer, ROSE, ACATECH/VDI) show that attitudes towards S&T are positive in both industrialised and developing countries. Demonstrating not only a high level of public interest in S&T, but also an appreciation that investment in field related research should be a national priority. Furthermore, popular S&T journals, television programmes and modern science centres attract large audiences.

Young people in developed as well as developing countries generally consider S&T as beneficial for society with only negligible differences noted between the genders (Sjøberg and Schreiner, 2005, pp. 9 et seq.).

There are, however differences between young peoples' attitudes towards S&T in developing and developed countries. Students in developing countries are more

likely to acknowledge the contributions of S&T to the development of society than their counterparts in the industrialised countries.

A wide range of difference was noted in the degree of interest shown for the different branches of S&T. Students in less well developed countries expressed an interest to learn about nearly all the topics listed in the ROSE questionnaire showing a diversified interest in S&T whereas students in more developed countries showed more selective interest (Sjøberg and Schreiner, 2010, p. 15).

Attractiveness of S&T Subjects

The attractiveness of school subjects relating to S&T has been researched in a number of studies. Although students in all countries share a positive attitude towards the role of S&T in society, the attitudes towards S&T related subjects in school are more mixed (Sjøberg and Schreiner, 2006, pp. 67 et seq.). These findings are demonstrated in Fig. 2.

It can be seen that students in developing countries liked learning science related subjects in school whereas attitudes towards these subjects in developed countries were more negative. We can also note differences in attitude between the genders, although this was not evident in all the countries studied.

Figure 2 Attractiveness of S&T subjects (Source: Sjøberg and Schreiner (2006, p. 67))

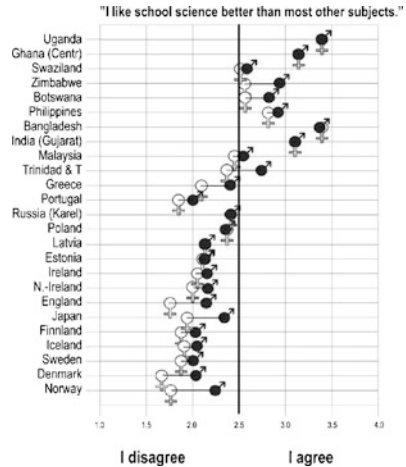


Image of Professions in S&T

Young people expressed different opinions regarding the image of professions in S&T, which impacted on how attractive they may regard a career in the field. For example those interviewed from developing countries perceived jobs in S&T to be attractive whereas those from developed countries were much more critical and negative, describing the typical scientist as male, with unkempt hair and working alone in a laboratory. The work could be dangerous and the usefulness of his work was seen to be negligible (Sjøberg, 2000, pp. 46 et seq.). Scientists are often depicted as loners who are not always interested in the well-being of society (Sjøberg, 2000, p. 69).

The German study ACATECH revealed a similar picture; jobs in S&T were not very popular among young people as these posts were perceived to offer fewer social contacts, low salaries, limited job security and fewer chances of promotion. The stereotyped image of S&T as a male domain also plays a role in attracting young people into the sector. This factor is given special attention in the following section.

Socio-cultural Differences and Gender Stereotypes

Gender appears to play a role in career preferences and decisions. This section focuses explicitly on gender differences in their social and cultural contexts. An international comparison shows that differences in perception, aspiration and career choices are gender specific in some countries while in other countries this divide appears less visible.

One finding of the SAS study (pre-runner of the ROSE study) shows that more girls than boys were interested in S&T in developing countries: 'The gender differences on the total are not large in any country, with Korea as an exception. But there seems to be an interesting pattern: In most of the developed countries, the difference is 'in favour' of boys, while the difference in most developing countries is in favour of girls' (Sjøberg, 2000, pp. 22 et seq.).

In contrast in industrialised countries boys show a higher level of interest in the sciences. The SAS study also revealed that girls in developing countries perceive sciences to be less difficult than boys (Sjøberg, 2000, pp. 23 et seq.). These findings deserve attention and explanation, although they are not a feature of the ROSE study.

It might be assumed that girls in developing countries perceive (science) education as something valuable because access to education in general, and science

education, in particular is not always available to girls. Therefore, those girls who have access to (science) education are highly motivated. A finding of the SAS study was that girls and boys were almost equally interested in technology in developing countries and the gender divide noted in developed countries was found to be almost non-existent (Sjøberg, 2000, p. 60). These research findings by SAS and ROSE are supported by employment figures: 'Women have entered highly skilled jobs in information technology in developing countries. This has happened particularly in countries where national policies have promoted S&T education and where young women have entered these fields-in many cases in percentages far greater than in developed countries' (Hafkin and Taggart, 2001, p. 41). Interestingly those developed countries which invested considerably in developing gender equity (Norway, Finland, Sweden) show a particularly marked gender divide.

In Germany the ROSE study revealed that certain topics relating to S&T are considered equally interesting to both genders (astrophysics and the universe, zoology, light and radiation). Neither gender demonstrated enthusiasm for botany. Boys preferred topics like electricity, energy, technology, machinery while girls preferred human biology, unsolved natural phenomena and aspects of medicine (Elster, 2007, p. 247; Holstermann and Boegeholz, 2007, p. 71). Interest in the environment and environmental protection showed no gender divide in any of the countries surveyed (Sjøberg, 2000, p. 60). The social content and applied relevance of S&T appears to be of high importance to girls and women. Jenkins argues that girls prefer science with conscience (Jenkins, 2006, p. 8). These findings suggest that girls are as interested in S&T as boys, but that they prefer different topics, leading to an overall picture which is less clear cut and more fragmented than commonly assumed.

Findings in Brief

We can summarise the findings by noting that the situation in developed and developing countries is quite different. The most notable findings are listed below:

- The importance of S&T for society is acknowledged in general, but stronger agreement is found in developing countries;
- The perception of scientists and technicians is more positive in developing countries;
- The interest expressed in S&T topics is greater in developing countries;
- S&T subjects are more favoured in developing countries;

- There is greater willingness to work in S&T in developing countries;
- Gender differences related to career choices are more explicit in developed countries.

Possible explanations for the differences found are elaborated in more detail in the following section.

Developing Countries

In developing countries, people have relatively limited access to technical devices in comparison to those people from industrialised countries, however the technical devices with which people come into contact are extremely important and sometimes vital (e.g. wells, generators). Consequently technology is perceived as an essential resource with which people are proud to work. The social importance of technology is thus transparent. Access to education in many developing countries is a privilege and offers employment opportunities. S&T subjects are often given special attention.

Careers in S&T can be seen to improve the daily lives of people in developing countries e.g. medical treatments, well, bridges, roads. Consequently the contribution engineers make to the development of such countries is considered to be of great value. In comparison with other jobs, positions in S&T enjoy and adequate income a high status. Students are therefore highly motivated to move into this field.

The insignificant gender differences noted could be due to the fact that education in general is the key to employment opportunities in developing countries for both boys and girls. Girls in developing countries who have access to higher education are in a privileged position and are highly motivated.

Developed Countries

In developed countries, technology is taken for granted; it is omnipresent and no longer actively noticed. Environments have become so highly technical and complex that most people don't understand the technology, they simply use it.

The contribution of scientists and engineers to society in developed countries appears to be more questionable (e.g. design of a toothbrush or coffee machine) than that in developing countries where the engineer is recognised as contributing to the well being of the whole country. It is not a privilege to be an engineer in an

industrialised country. Universities in developed countries offer a broad range of degree programmes. Careers in S&T do not offer any advantage in terms of income or job security in developed countries. Conversely, they are often less attractive in terms of career prospects.

Challenges and Recommendations for the TVET Systems in Developing and Developed Countries

In the following sections we will discuss the different challenges the world faces and which measures could be taken to prevent a shortage of engineers and technicians.

A country's stage of technological development influences people's perception of S&T (Sjøberg and Schreiner, 2005, pp. 15–16). Late modern societies emphasise social values such as democracy, self fulfilment, caring for others and the environment and the importance of these values is reflected in career choices. The registration rate of students onto traditional courses in S&T has been steadily decreasing in western countries, while the registration rate of students wishing to study applied sciences such as medicine, environmental science, social sciences has increased or at least remained constant. These courses are often dominated by females: 'This may indicate that youth in more developed countries believe that the most important challenges facing our society are related to health and environmental issues, and consequently, that these fields can offer meaningful jobs' (Sjøberg and Schreiner, 2005, p. 15).

Challenges for Developed Countries:

Challenge 1: The implicitness of technology for young people has to be opposed and conscious ways to experience technology need to be fostered

New approaches need to be developed to encourage reflective, competent and critical use of technologies. Young people should be exposed to exemplary use of technologies in educational contexts.

Challenge 2: Design and Technology Education needs to be improved qualitatively in addition to quantitatively

Educators should not assume that technological understanding is developed at home. This should be the responsibility of the educational system.

Historically design and technology has played a marginal role in the school curriculum. Greater emphasis needs to be placed on the study of design and technology as distinct and related subjects in both primary and secondary education. Design and Technology needs to be self contained, interdisciplinary and multidisciplinary, integrating the key features of both design and technology and embedding links to other subjects. The status and content of Design and Technology varies greatly across industrialised countries.

In addition to reviewing the school subject 'Design and Technology' the pedagogical application of the subject should be redeveloped. The teaching process should reflect the nature of technology, focusing, for example on problem solving, creativity and experimental learning.

Curricula development would benefit from a paradigm shift: to move away from its current orientation to S&T towards a more relevant and meaningful curriculum. The possibility of designing and modifying technology should enjoy a higher status. Greater attention should be given to creativity, originality and curiosity (Euler, 2008, p. 76). The relevance of exemplary and problem-oriented content needs to be addressed and an encyclopaedic content structure developed.

In connection with the reform and redesign of the curriculum, we also need to rethink the role and the training of teachers. In consideration of the gender gap shown in developed countries, special measure need to be taken to enable teachers to motivate girls and ignite their interest in S&T subjects. Two particular measures seem to be required as a matter of urgency. Firstly, teaching needs to be more finely differentiated to meet different learning needs and styles and secondly lesson concepts need to build on students' previous experiences in order to make them accessible and relevant.

Challenge 3: Improve the attractiveness of jobs in Science and particularly in Technology

Jobs in S&T suffer from a negative image. This image is more pessimistic than it seems. In order to attract students into these fields, a realistic picture of jobs needs to be portrayed. This could be achieved by the following measures:

- Improved career counselling
- Dialogue exchange between engineers and students
- Internships (work experience)
- Lectures by engineers about their jobs etc.

Additionally, the development of partnerships between industry and schools would help promote the attractiveness of jobs in S&T. The introduction of the school subject 'Technology' in German schools will be of interest to follow.

In order to promote S&T to young women it is essential to provide positive role models in engineering. Studies have shown that the negative image of jobs in S&T is caused by the negative image of the corresponding school subjects. Therefore it would seem appropriate to make these subjects more attractive to school age children. This can be achieved by adopting more student-centred approaches to learning and teaching and targeted, focused lessons for different learner groups.

In order to increase the number of graduates in engineering, academic programmes should be accessible to a wider range of students: students from non academic backgrounds, in the case of technology for example. Universities will need to prepare for this new kind of student and foundation courses may be introduced to prepare students for their study.

Developed countries face a number of challenges, as do developing countries however the nature of the challenges is different.

Challenges for Developing Countries

The interest in S&T noted in young people in developing countries offers great potential compared with the levels of interest shown by young people in developed countries. This is a great advantage.

Challenge 1: Developing Countries should use their human potential

Developing countries should value their human potential. A positive attitude towards S&T could turn into economic advantage. Developing countries should develop educational structures and programmes to capture the positive motivation towards S&T. This is a pressing need for developing countries. Industrialised countries make use of the potential in developing countries by encouraging students to study in the developed countries.

When developing programmes for S&T, developing countries should give special attention to the needs of women given their relatively high interest in S&T. The support of women in this aspect could be a major pillar for economic development, although it may also challenge gender roles in male dominated societies.

Challenge 2: Development and implementation of Technical Training and degree programmes

In order to avoid a brain drain to developed countries, technical training and degree programme need to be developed and implemented in developing countries. A first step would be to provide programmes (particularly in S&T) for young people. The current practice to train and educate young people abroad (in industrialised countries) bears the potential danger that the graduates will not return to their home country.

Challenge 3: Developing countries need to avoid social disinterest in S&T

The trend of negative attitudes towards S&T seen in developed countries is a clear indicator of what can be expected in developing countries as progress in technology is made. It could be speculated that a lack of interest and a subsequent lack of engineers could be on the horizon. The initiatives developed by developed countries could provide models of good practice to adopt in dealing with the phenomenon of dwindling interest in S&T. The findings of industrialised countries can serve as a barometer of what might be expected in developing countries offering valuable suggestions of what measures might be taken to avoid a shortage of engineers in the future.

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Georg Kerschensteiner and the Plea for Work-Oriented and Vocational Education – Germany's Educational Debates in an Industrial Age

Philipp Gonon

The prime trigger for reforms in school and workplace in the fin de siècle was a 'one-sided and excessive industrialism' (cf. Sieferle, 1984, p. 147), which led to new and sundry consequences in society. For that reason, one prevalent approach in Germany was social and political in thrust and, after the turn of the nineteenth century, culminated in the idea of furthering vocational education and restoring 'joy in work' as part of a pedagogical agenda. This concept was also propagated by Georg Kerschensteiner (1854–1932) who implemented these reforms since 1900.

Introduction

The '*horrors of the dominant industrial state*' (Brentano, 1901) were an important basis of the debates which led to reforms of the educational system at the turn of the century. Particularly, the so-called 'social question' became a central trigger in order to promote vocational education in Germany. Fears that the estrangement of work and also of society altogether could lead to a crisis or even to a societal revolution were met with a program where the working classes should be integrated into society through schooling. Furthermore, the joy in work should be restored or awakened by reforms at the workplace but also through a reorganization of industrial work into certain manual workings. Therefore, the schools had to be reformed as well and turned into so-called 'Arbeitsschulen' (see Gonon 2009). A further reform of the curriculum should lead to more realism and advance the manual skills and expertise at the same time because this applied school is more appropriate for children as it was highlighted in contemporary psychology.

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The Social Question as a Question of Joy in Work

In the introduction to his book *Die conventionellen Lügen der Kulturmenschheit* ('The Conventional Lies of Civilised Mankind', first published in 1883), the influential essayist Max Nordau entitled the workers in a strikingly negative metaphor:

In Germany, socialism is gnawing with a hundred thousand mouse teeth at the pillars of all government and social institutions. Neither the luring notes of the pied piper of state socialism, academic socialism and Christian socialism can deflect these indefatigable rodents even for a moment from their uncannily quiet, subterranean enterprise of destruction, nor do the wastefully installed traps of the emergency laws, the state of siege and police action have any effect (Nordau, 1909, p. 2).

This pessimistic assessment of the situation sums up the mood of the bourgeois establishment before the turn of the nineteenth century regarding future developments if nothing were done to effect a 'reordering of the economic organisation of society' (Nordau, 1909, p. 253 et seq.). Even if we leave the culture-critical and conservative undertones aside that reverberate through the book as a whole, i. e. with a description of society as a huge edifice of lies, the author's insolent comparison between industrial workers and rodents is rather disconcerting from a contemporary perspective.

Nordau believed that there were indeed serviceable remedies, though not among the broad range of proposals for a solution as offered by socially engaged groups and individuals. In order to break free from the bond of potential internal conflicts, he believed that there should be a return to a state of childhood. Like Indian Nirvana, this stage could rest either on lack of knowledge or absolute knowledge. Since it was no longer possible to return to childlike innocence, the necessary ambition/destination had to be human uplift, although all the while following the light of natural morals. In keeping with the instinct for self-preservation of the species, those morals instinctively evoked the good (Nordau, 1909, p. 341 et seq.). From this analysis, in which economic and social problems are reduced to individual yardsticks for behaviour, it is possible to formulate a pedagogical program, and this is what was actually done at the time of reform pedagogy.

Initially, however, it is instructive to identify the above quote as a component in the discussion on the 'labour question' or 'social question'. As animal-like creatures decomposing the foundations of the state, the picture of the workers evoked here is reminiscent of thoughts in Friedrich Albert Lange's book *Die Arbeiterfrage - Ihre Bedeutung für die Gegenwart und Zukunft* ('The Labour Question. Its Importance for the Present and the Future', first ed. 1865). In the chapter on the 'struggle for survival', which is evidently influenced by Darwinism, he warns about the physical

degeneration of the human race (Lange, 1879, p. 58 et seq.). Industrial workers are considered to be the strongest and most decisive stratum of society. They are exposed to the 'exhausting burden' of their work, and thus long for a positive change (Lange, 1879, p. 11). In order to ban wild thoughts, like hatred and revenge, their situation should be enriched by 'intellectual work' (Lange, 1879, p. 389). Their desire to establish associations and educational societies should be supported.

A different approach was taken by Heinrich Herkner. He considered that the labour question could be solved in the ambit of life of the rural community. In any event, it necessitated social reform in order to increase economic and social independence of the individual via intervention by the state. Herkner, who later became a professor of economics in Zurich and was a member of the *Verein für Socialpolitik* ('Association for Social Policy'), concluded his book *Die Arbeiterfrage* (1894) by propagating an alternative situated between liberalism and communism, emphasising the cultivation of patriotism and dedication to the common welfare, as was common in smaller independent social formations at the time (Herkner, 1894, p. 282 et seq.).

These references are short abridgements of various opinions taken from a comprehensive debate on labour and its development in industrial society. In no other country the question of labour with regard to the economic and social future was debated in greater intensity and detail than in Germany (see Campbell, 1989). Despite that fact, German pedagogy of the time seemed to have been little affected by this debate. This is evidently from the analysis of Theodor Litt, who showed that the pedagogues were quite chary of touching this whole issue. In his view, the 'antinomy of education', or the 'triumph of materialism' as a consequence of the division of labour, prevented education from becoming an enterprise that sought to 'shape the personality as a work of art', as he once put it (Litt, 1955, p. 111). Litt also discerned hesitance and ignorance on the part of pedagogy with regard to social, technical and economic problems. Indeed, Litt contended, even Georg Kerschensteiner, who had explicitly dealt with these topics before and had been blinded by his affinity for German classicism, gearing to 'creativity in arts and crafts, so esteemed by Goethe, and its educative impact' (Litt, 1955, p. 67). In this context, he had more or less forgotten about industrial labour and its role. That criticism is/can be supplemented by the contemporaneous critical voice of Anna Siemsen. She complained about the issue that vocational pedagogy had created a world of factories with naively imaginary types of human beings and vocations: knights, artists, artisans, monks, landed gentry, landed clergy, officers, foresters (Siemsen, 1926, p. 65 et seq.).

If we follow this analysis in its full reach we could make the striking assumption that pedagogy had innocently romanticised or totally ignored the modern world of

labour and its myriad changes. Of course, pedagogy as a discipline was not alone in this, but our focus here is primarily on educational theory and its theorists. Though this assumption is not completely unfounded, the present paper will advance arguments which seek to partially relativise such a 'naiveté' on the part of pedagogical reflection. I would argue, then, that even the pedagogues intended to press ahead the quest for an ethos of labour as discussed especially by economists and social reformers, independent from and even often counter to such social and technological developments.

Education for work and a vocation should not follow deductively from an a priori analysis of the industrial world of labour and its future. The concept of work as seen by pedagogy does not involve any kind of empirical stock-taking from which conclusions can be drawn. Rather, it is a project tied to social policy involving historical, political and economic discussion threads which then expand into pedagogy. Under these circumstances, Georg Kerschensteiner's thoughts on work, vocation and civic education are not to be understood as original achievements. They are best conceived as Wilhelmine common sense instead.

Educational Institutions as Contributing to the Labour Question (Social Reform as a Means to Forestall Socialism)

Despite the visible distance between pedagogy and the world of work, education and its institutions were accorded an important role in any solution to the labour question, at least by the economy and government. The state of discussion and its reflection in Kerschensteiner's first prize-winning treatise *Staatsbürgerliche Erziehung der deutschen Jugend* ('Civic Education of German Youth', 1901) will be discussed first before we engage in the concept of 'joy in work'.

The pioneer folk life scholar and historian Wilhelm Heinrich Riehl tried to fathom the problem of work and other matters in a comprehensive study of German society. His *Die bürgerliche Gesellschaft* characterises the rise of the workers as a 'class consciousness of poverty', which had emerged as a result of social sins of the other classes (Riehl, 1907, p. 379 and 390). Written between 1847 and 1851, this work can be seen as a precursor of the discipline of sociology.

The influential editor of the *Preussische Jahrbücher*, Heinrich von Treitschke, saw little value in such an analysis. In his eyes, the so-called fourth estate consisting of rural inhabitants, small artisans and workers of all kinds was a population group largely oriented to economic life and to be described not by the attribute of being

poor but by physical activity alien to political and intellectual life. Therefore, this estate was not as historically unique as Riehl imagined (Treitschke, 1859, p. 28). In Riehl, he continued, there was always some underlying reflection of a melancholic longing for the good old days, apparent likewise in his subjective preference for the idyllic unadorned character of the peasant, and Riehl's socio-political interest in stabilising the estates stood in contrast to the fact that they were actually in the process of dissolution (Treitschke, 1859, p. 79). In his habilitation thesis, Treitschke argued in an open polemic against Riehl that a critical science of society was needed instead of dilettantism. For Treitschke, the state constituted society in its unified organisation, encompassing all of the life of the people and overcoming all sectionalism. Thanks to its power, it was able to order society and imbue it with morality by means of law (Treitschke, 1859, p. 81). Treitschke rejected also Riehl's later work *Die deutsche Arbeit* with the same arguments and accused Riehl's concept of work of harbouring an inadmissible idealisation.

The dispute between Schmoller and Treitschke, on the other hand, had a different set of accents when it came to work and society. Gustav Schmoller made a huge claim for himself and the social scientific analysis pursued in the Association for Social Policy: He alleged to have found a link between the misery of the workers and laissez-faire capitalism (Schmoller, 1918, p. 287). In contrast, Treitschke saw the Association's aim and perspective as something that aided and abetted a socialist upheaval (Treitschke, 1874). Such a criticism, apparently shared by many, was levelled not only at the members of this Association, who later provokingly appropriated for themselves the title of 'lectern socialists', in the sense of 'armchair socialists'. In an article on 'labour' in the famous encyclopaedia *Herders Konversationslexikon*, even Adam Smith was accused of having abetted socialism by excluding the moral question from his analysis (Herders Konversationslexikon, 1902). In a response directed against Treitschke in 1875, Gustav Schmoller noted that already Smith clearly must have understood that the problem of the division of labour gave rise to social inequalities. Treitschke's criticism in the *Preussische Jahrbücher* that the Association for Social Policy, in which Schmoller played a key role, was to be regarded as a 'benefactor of socialism', prompted Schmoller to reply that a revolution should be prevented by the introduction of proper reforms (Schmoller, 1875, p. 91). Unlike Treitschke, he did not view Social Democracy as the result of demagogic politics but as the product of an unjust division of wealth and of low wages. He claimed to hold this view not as a socialist but as a 'radical Tory' (Schmoller, 1875, p. 128):

The more monarchic I feel and the more I know that all my thoughts are united with the state of the Hohenzollern, the reestablishment of the German Reich and its struggle against the anti-state tendencies of ultramontanism and Social Democracy, the more I feel bound, with unconditional openness and honesty, to express my support for what

I believe is justified in today's movement of the fourth estate, struggling for what in my view is the only thing that can guarantee the normal further development of our free institutions, namely social reform (ibid., p. IV et seq.).

Not only is this answer to Treitschke's criticism a statement of political principles, it also contains a program for the Association for Social Policy, which will not be further explored here. Moreover, an ethical concept of work is developed and at the same time an expansion of the cultural and educational realm to the workers is called for.

In this respect, Schmoller's approach followed Riehl's definition of work, though for other motives: The honour of work is central yet it serves not only the individual but also the 'personality of the nation', and in this process, socialism is said to fade away 'as a spectre devoid of substance'. Schmoller launches a vehement attack on Treitschke's notion that the workers must be denied education, a plan that could have unforeseeable negative consequences. Contrary to the view that a person who lives by 'rough labour' every day was not amenable to higher education, he replied that what was important were the schools available and the cultural influences a person was subject to (Schmoller, 1875, p. 113). Since the time of ancient Greece, cultural progress had reduced the gap between the classes, i. e. between slaves and citizens.

The great progress of our time is that the honour of labour is recognised, that governing, painting and scientific research are no longer thought to be the only worthy pursuits of a decent human being, that handicraft and education are no longer seen as contraries that are mutually exclusive (Schmoller, 1875, p. 117).

Schmoller (1875, p. 120 et seq.) added that the desire to exclude workers from advanced education and even to keep them away from obligatory attendance at schools for further education was economically absurd at a time when factory owners and master artisans were complaining about the lack of proper education of these same workers.

In sum, he expounded that Treitschke's theory amounted to a division not only of the functions in the process of labour but indeed of society, which reserved education and knowledge for the higher classes and emotion and religion for the lower ones (Schmoller, 1875, p. 125). To what extent Treitschke actually stated his opposition to education for the lower social classes must remain an open question here. But the fact is that his essay *Freiheit* ('Freedom') contains statements which concede only religious education to the lower social classes. As he argues elsewhere, the demand for equality in the field of law should not stray onto the territory of education for the individual (Treitschke, 1907, p 13).

Yet, the labour question was certainly not just some debate about the workers' level of education, whether actual or desired. It was about the future of society as a whole, and education was therefore much influenced by social policy and its desiderata. It was certain that the industrial working class would grow, and with it the urgency of the question of the workers' social-political integration. For a confirmation of this estimation, all that was necessary was to take a closer look at the situation in England. England's industrial development was a terrain not only for testing and developing economic theories but also for estimating the effects of a planned set of social and educational policies.

An important work in this connection is the study *Zum sozialen Frieden* ('On Social Peace') by Schulze-Gaevernitz, published in 1890, which strongly referred to England. Carlyle is portrayed as a great educator who also called for a social attitude and altruism even under the conditions of large-scale industry (Schulze-Gaevernitz, 1890, p. 272). As the author emphasised, the example of England showed that a peaceful resolution to the class struggle was possible. With large-scale industry as the dominant form of business, the centre of gravity of society shifted to the masses, and at the same time towards democracy. In the Anglo-Saxon world, this had led to a reconciliation of social contrasts, a process for which an increase in education, the legalising of organised trade unions and higher wages had been characteristic prerequisites (Schulze-Gaevernitz, 1890, p. 486 et seq.).

Accordingly, a higher level of wages, a well-developed set of laws for the protection of workers and a reduction in the number of working hours per day were the demands that Lujó Brentano deduced from a study of the situation in Great Britain. 'It is a happy fact', he wrote in the final sentence of his book *Über das Verhältnis von Arbeitslohn und Arbeitszeit zur Arbeitsleistung* ('On the Relation of Wages and Labour Time to Labour Output'), 'that social reform, which is called upon to elevate millions to a higher level of civilised behaviour, is also the only means that can lead to a strengthening of the economic and political power of the nation and its role in the world!' (Brentano, 1893, p. 55).

Hans von Nostitz's *Das Aufsteigen des Arbeiterstandes in England* ('The Rise of the Working Class in England', 1900) as well seeks to explore ideas to solve the German labour question. His extensive study can be seen as the actual blueprint for Kerschensteiner's work on civic education of German youth, not only with regard to the frequency of quotes from Nostitz but also to the orientation in theme and content. All of Kerschensteiner's examples of education are taken from Nostitz, and his references to Carlyle likewise point to this source.

Nostitz, a Prussian official, who spent six months in England, soberly notes that the essential feature of social development in the nineteenth century had been the

rise of the working class (Nostitz, 1900, p. 721). He viewed his report as a belated reply to Engels' *Zur Lage der arbeitenden Klasse in England* ('On the Situation of the Working Class in England', 1845). Marx's prediction of the deepening destitution of the workers and the subsequent violent revolution had not proven to be true (Nostitz, 1900, p. 740), but only due to the implemented social reforms. Nostitz stressed the fundamental importance of social peace which in turn was based on political maturity and education (Nostitz, 1900, p. 777).

It was precisely in order to domesticate socialism and to defuse its dangerous dimension that a well-developed education system was necessary. Nostitz described such a system in detail and with numerous examples, and Kerschensteiner referred to Nostitz' descriptions of educational institutions in England a number of times in his treatise. Along with Nostitz, the discussion between Schmoller and Treitschke finds its distant echo in Kerschensteiner's conceptions concerning the civic education of German youth.

Like Schmoller, Brentano was also opposed to a bifurcation of society into a select happy few and a vast poor majority (Brentano, 1893). To that extent, Kerschensteiner was following the social reformers of the Association for Social Policy by stressing the value of education for workers. He called for a democratisation of the 'aristocratic attitude' even for the workers. However, he remained a faithful disciple of Treitschke in his conception of civic education, which in his view had to overcome all particularism and diversity for the sake of a higher (national) unity and order.

Joy in Work Through Education for Arts and Crafts in the Age of Industry

Not only the mere existence of educational institutions was of relevance to the labour question; it was also a matter of channelling the dynamics of industrial development and the connected potential for discontent into peaceful pathways. Riehl's notion of the 'honour of labour' had to be applied in new contexts. In particular, vis-à-vis the working class and its tendency to basic materialism, it was denotative to cultivate ideals which would protect the workers and their stratum from 'English-French enlightenment garbage' (Bang, 1924, p. 65). In contrast, the far more sober economist Brentano stressed that ideals were indispensable 'in order to overcome the negative side effects of our economic development' (Brentano, 1902, p. 37). In his view it was necessary to reconcile industrial labour with the needs of respective workers. Anticipating this debate in 1846, Lorenz von Stein

had also called for intellectual and physical education for workers, since this would give them the capacity for a higher level of work and competence. At the same time, every effort should be made to develop plant and machinery to the highest possible level of perfection (Stein, 1846, p. 289). This concern culminated in the postulate of 'joy in work', which was transposed from outside into the industrial labour sphere in order to bring education and personality into harmony alongside industrial output. One suitable realm for cultivating such pleasure in work was the realm of arts and crafts. After all, despite the transition from wood to iron as the quintessential industrial material, experience and manual dexterity and creativity had retained considerable importance in industrial production (Radkau, 1989, p. 63). As Rein's *Enzyklopädisches Handbuch für Pädagogik* consistently noted, training for handicrafts was valuable not just for handicraft proper but for industry as well (Beyer, 1904, p. 575). Work had to be imbued with a new dignity, and this was to be anchored and secured pedagogically and aesthetically. The potential threat emanating from machinery had of course to be downplayed. In literary fiction, however, such aspects were foregrounded far more explicitly: Industrial work was depicted as monotonous, and 'the machine' was even portrayed as a force able to literally bury the human being, as described in Julius Lerche's tale *Der Riese vom Spinnhof* (Lerche, 1919).

Notwithstanding the asserted acceptance of machines, industrialism and large-scale factories, critical stances towards this development emerged, as a leitmotif becomes evident from Herkner's 1905 publication that deals with the topic of 'joy in work'. He noted that modern industrialism was characterised by a concentration of ever more professions in large-scale factories. For that reason, a new discussion of the question of 'joy in work' was imperative. Such joy or pleasure was greater in agricultural and craft vocations than in industry (Herkner, 1905, p. 14). Joy in work could be fostered by ensuring that the specific activity to be performed took on the character of a professional specialty (Herkner, 1905, p. 16). Work must not become monotonous. This meant that the machine had to serve and assist the worker and allow latitude for his or her individuality, for example, in such a way that the final product was then seen as 'the result of the worker's hands and his craftsmanship, dexterity, and professional competence' (Herkner, 1905, p. 19). To enhance pleasure in work thus demanded an upgrading in professional training and skill levels. With reference to Goethe, Pestalozzi and Ruskin, he claimed that professional activity formed an 'infinitely valuable means for education, one that shaped character. In the interest of our national future, we cannot do without its growing application and utilisation' (Herkner, 1905, p. 32). Furthermore, the search for genuine 'joy in work' also awakened the spirit for inquiry and discovery.

Karl Bücher did not hesitate to go into great detail, looking at the function of music and poetry in the world of work in classical Greece as well as in 'indigenous peoples', such as in the Sudan. He stressed that work had of course become more productive by the division of labour, but was now also more sober and drab. A cheerful playfulness and joyous delight on the job had been supplanted by deadly earnestness and an often painful resignation. Nonetheless, he advised, we should cling to the hope that 'technology and art would someday meld in a higher rhythmic unity' (Bücher, 1896, p. 117).

That longing for 'joy in work' with regard to changes in working conditions was already present in the writings of Charles Fourier: In his *De l'anarchie industrielle et scientifique*, he calls industrialisation an insidious gift to humankind because industry leads to the desperation of the 'salaried classes' (Fourier, 1847, p. 4). He alleged that even the primitive in his state of sluggishness had a better life than these workers, and his senses were not perpetually being goaded, stimulated and irritated by luxury products (Fourier, 1847, p. 5). Industrial anarchy was spreading, even into Switzerland, a country famous for its freedom and morality. Even workers from St. Gallen and other Swiss factories were in a similar sorry state. In addition, Switzerland was providing workers to all countries and crowns, which would never be possible if the Swiss farmers were happy (Fourier, 1847, p. 19). So it was clear to Fourier that the 'masse d'une nation' could not derive any benefit from such industrialism, aside from a few factory owners and mercantile Cossacks (Fourier, 1847, p. 21). A way had to be found out of this labyrinth and monstrous mechanism, not by destroying factories (Fourier, 1847, p. 22) but, as stated in his 'plan for social reform', by passionate and hands-on creativity (Fourier, 1925, p. 129). The prerequisite for this was a varied spectrum of small activities. Fourier mainly proposed to concentrate on agricultural work in groups, involving hunting, fishing, raising pheasants and growing vegetables. Industrial work was also scheduled but needed little time, since three times as much could be accomplished in an hour than by wage labourers who were slow, inept, bored and loved to stand around gaping (Fourier, 1925, p. 131). Since his envisioned new mode of work in what he called a Phalansterie – a kind of communal unit for labour and living – would not be exhausting, people would be able to gather to enjoy concerts, theatre and art of all kinds after dinner, and less time would be needed for sleep.

In Germany, this criticism of 'industrial feudalism', the rural Phalansterie as its alternative and Fourier's visionary predictions made a huge impression on August Bebel. He decided to make Fourier's thought applicable to and fruitful for 'scientific socialism', and published a detailed presentation of his ideas for the German public (Bebel, 1907, p. XVI). Following Fourier, he wrote that education for the young

sought to train and educate them for work (Bebel, 1907, p. 117). In the Phalansterie, three-year-olds would be playfully introduced to light work in the household and encouraged to do small tasks, though without enforcement. Purposefully appointed and nicely furnished playing halls, kitchens, small workshops, equipped with small tools and machines, would give them an opportunity 'to activate their abilities and instincts' (Bebel, 1907, p. 124). Actual intellectual work would not begin until they reached the age of nine.

Bebel put Fourier's work on a par with that of Goethe, since he considered their fantasies about human happiness to be related. Still, Fourier was considered superior to Goethe in his knowledge of the real situation of the masses and the natural history of humankind (Bebel, 1907, p. 244 et seq.). In Bebel's view, the socialist future would be rich in artists and scholars, since physical work would only take up a small part of daily life.

This way of perceiving Fourier was also found outside the strict perimeter of German Social Democracy, for example in thinkers such as Gustav Landauer. In his *Aufruf zum Sozialismus* ('Call to Socialism', 1911), he stressed that socialism was a kind of re-fulfilment of society and work with spirit, a combination of agriculture, industry and handicraft, intellectual and manual labour (Landauer, 1978, p. 145 et seq.). Work must become play again, in the economy and in the working community.

Even thinkers diametrically opposed to socialism were influenced by Fourier when it came to the idea of 'joy in work'. Riehl, the author of *Deutsche Arbeit*, was initially directly inspired by this idea (Campbell, 1989, p. 36), although in later writings he scrupulously avoided any 'foreign' references (yet, cf. his reference to Fourier in Riehl 1883, p. 239). Following Fourier, Riehl stressed that ethical reform in connection with work was fully justified, complementing economic and political reform. The ethical motive and aim of work were distinguishing traits of the true worker (ibid., p. 222). Along with all reforms, the previous 'honour of the trade' should continue to be cultivated; hence every work should have its honour (ibid., p. 26 et seq.).

There is no denying that all these proposals sprang from a handicraft-oriented or rather pre-modern concept of work. An additional fond hope was that industrial work would be located in rural environments, as was common in Switzerland.

The concept of 'joy in work' or 'joy in creation' contained a moral component in particular. Creating such a condition in industry and the large factories was no easy matter, as can be seen from a number of book titles, for example, of the *Kampf um die Arbeitsfreude* ('Struggle for joy in work', De Man, 1927). Drawing on ideas of Ruskin, the famous art historian Karl Scheffler thus called for an idealisation of the

existing scheme of work. Ethical and even national ideas had to underpin labour, and such an ideal would elevate both the individual and the collective to a higher level of civilisation. The soul harboured a 'quiet need for an idealism of labour'; this is why questions of how to make work more ethical should also become part of economics and its discourse (De Man, 1927, p. 99 et seq.). Other authors too liked to link such ideas with nationalism. Work as an ethical act had to accentuate and bring out what was 'truly German' (Lhotzky, 1919, p. 64). Moreover, the will to high-quality work went hand in hand with 'joy in work':

Every person should become productive in such a manner that he completely rejects the disgraceful botchy work that we are surrounded with on the street and at home and that we live with and accept as if there was no other choice. Instead we should demand high-quality work (Scheffler, n.d., p. 34 et seq.).

Idealism of work and joy in work also required a new simplicity and solidity which could likewise lead to a renewal of industrial work and handicraft. In the case of Scheffler, this reasoning was even connected with the hope that the old handicrafts could gain the upper hand over industrial work, serving as a kind of 'rebirth' of productive manufacture. He stressed that the culture of art was based on handicraft and high-quality artisanship. With the proper quality, it could replace a 'dazzling' but hollow commercial civilisation:

And precisely because we are able to do it, because moral exertion, diligence, intelligence, objectivity and self-limitation are sufficient to create high-quality work in handicrafts in all fields, it is our duty and obligation to work untiringly in this direction (Scheffler, n.d., p. 35).

Art and artistic handicrafts, indeed the 'spirit of the Gothic' (Scheffler, 1917) seemed to take on an educative role. The efforts to preserve and advance traditional crafts – exemplified, for instance, in the British Arts and Crafts Movement – were directed against industrialisation and its seemingly unavoidable side effects. These efforts had a broad impact and were met with interest even by protagonists of the German movement for the work school, the *Arbeitsschule* (see Gonon, 1992).

The reformist Arts and Crafts Movement in Britain had been inspired by the writings of Ruskin and was at its height from 1880 to about 1910, with William Morris as one of its best-known practitioners. The movement began as a reaction to the 'soulless' machine-made production of the Industrial Revolution, and turned from the machine as the root cause of all evil to an emphasis on the revival of all manner of handicrafts.

That someone of the stature of William Morris, following in the footsteps of Ruskin, denounced the 'ugliness of modern life', appeared to assign a new role to arts and crafts. This approach had an impact on the industrial world of work beyond

art circles (Campbell, 1989a).¹ In contrast to Morris, however, the accent here was not on banning the machine but on curbing its unimaginative and dull application. Along with representatives of art and crafts schools, such as Van de Velde, resolute advocates of an idealised understanding of work oriented to joyful creativity could also be found in social reform circles.

As early as 1902, Friedrich Naumann had spoken of the ideal of a people imbued with the spirit of aesthetics and beauty in his *Kunst und Volk* ('Art and the People', 1902, p. 5). Industrial work, he alleged, led ever more people to carry out fragmentary tasks on the job instead of a holistic shaping of a product (Naumann, 1902, p. 6). 'Education for the Personality in the Age of the Large Factory' – thus the title of another of his publications – should not just train workers to operate machines, because then both man and machine were nothing but a 'sloppy piece of work'. This request can surely be read as a criticism of Treitschke. Instead, human beings had to preserve responsibility for their work even when using advanced machinery (Naumann, 1907, p. 24 and 37). For that reason, before people were sent to work in large factories, the school had the special task of preparing them by shaping their attitude and intellect (Naumann, 1907, p. 39).

The handicrafts could serve as a paradigm especially for the industry, because they might provoke a self-critical development and a revamp of its approaches. As Naumann mentioned in an allegorical vein in *Die Kunst im Zeitalter der Maschine*, 'when the machine saw that it was only doing little work, it took up a position behind the artisan again, adopting [...] his art' (Naumann, 1964, p. 189).

Unlike Scheffler, Naumann apprehends the ideal for Germany not in handicraft per se but rather in a 'people working with machines, but thoroughly educated in the arts' (Naumann, 1964, p. 192). An absolute prerequisite for this was social peace. He reasoned that the orientation to the world market and the status of Germany as a world power must lead to a conciliation of management and labour. It was not the machine that was the problem, but rather the concomitant depersonalisation of work, the draining and evisceration of its very soul and spirit. That was a tendency inherent in philosophical materialism and industrialism (Bang, 1924, p. 89). The strong agreement of social reform and art regarding pedagogical consequences

¹ As Osthaus notes in his biography of Van de Velde, new perspectives were opened up for the plastic arts: 'Now he saw the path stretching out before him: Plastic art had to become applied art, applied to life, from which the spirit had departed. And work on beauty had to return to humankind its lost nobility' (Osthaus, 1920, p. 10 et seq.). The Belgian Henry Van de Velde was one of the first designers and architects to work in the abstract style that would become characteristic in design of Art Nouveau (Jugendstil). He founded the Kunstgewerbeschule in Weimar, the predecessor of the Bauhaus, and was closely associated with the Deutscher Werkbund.

becomes evident in the quest for the 'New Art' and 'New Man' (Scheffler, 1932). This quest peaked in an empathetic endorsement of work that could, in the form of a general task for education, serve as a useful slogan for any reform pedagogue: 'We need work, work – nothing but selfless work, animated by joy' (Scheffler, n.d., p. 40).

In keeping with this view, it was considered important to cultivate work and joy in work inside the school as well. Illustrative of that turn was the call for 'practical action' in Kerschensteiner's widely read work *Begriff der Arbeitsschule* ('The Concept of the Work School'. Such practical activity served not only to inculcate an 'objective attitude' but also led to an 'inward, soulful happiness'. According to Kerschensteiner, 'joy in work' in a pedagogical sense was 'nothing other than the joy in being the very origin of the realisation of the value of objectivity' (Kerschensteiner, 1957, p. 55).

Pedagogical Conversion and Implementation

The idealisation of work and imbuing it with 'spirit', along with joy in work had of course been issues in educational discourse even before the proponents of the work school came on the scene. For example, the Swiss writer Friedrich Graberg in *Die Erziehung in Schule und Werkstätte* ('Education in the School and Workshop', 1894) stressed that it was important not just to perfect steam and electricity but also to cultivate 'the intellectual powers of our workers bestowed as a gift from their Creator' (Graberg 1894, p. 12). Competence on the job had to be increased through education in order to generate the level of respect for manual labour. As early as 1896, Ewald Haufe had termed this reform a 'work school', and one can easily gain the impression that he was directly anticipating Kerschensteiner a full decade earlier when instead of book wisdom and knowledge he stressed a more hands-on curricular framework: Inquiry and active learning, creative endeavours, artistic activity and productive work as hallmarks of such an *Arbeitsschule* (Haufe, 1896, p. 4, 28 and 37 et seq.).

With this focus on education for joy in work in the school, it was possible to 'subjectivize' a social problem, translating it from social-political analysis into a concept amenable to work in pedagogy. This was precisely the achievement of proponents of manual arts and the work school: They accorded the school a role that promoted more manual dexterity, more activism in the classroom and active learning, joy in creativity, and education of character for the community and state. This is how Georg Kerschensteiner formulated it in 1901 in his festive address on the occasion of the 50th anniversary of the Bavarian Arts Association, referring there to Goethe

and thus providing the needful classical legitimation. ‘The industrial education of German youth’ should not rely on an early groundwork of general knowledge; only ‘creative and industrious work can propel us forward’ (Kerschensteiner, 1901, p. 5). His 1904 essay *Berufs- oder Allgemeinbildung* (‘Vocational or General Education’) states that ‘true education’ derives its power ‘solely from serious, intensive, practical and productive work’. Only through independent creative activity oriented to specific tasks could the artisan, the peasant, the artist or scholar achieve a true peak of human perfection (Kerschensteiner, 1910, p. 42).

The role of manual-practical activity in education is especially prominent in the 1908 proceedings of the German Work Federation (*Deutscher Werkbund*). It is stressed there that such manual activity is not only useful for handicrafts but also for industry (Muthesius, 1908, p. 143 et seq.).²

Georg Kerschensteiner was a member of this Federation, and he also emphatically stressed that industrial education was beneficial for the entire education of the people and nation (Kerschensteiner, 1908, p. 137). In his view, what was being neglected notably was education for ‘joy in creativity’. But education for ‘joy in work’ entailed that the schools pay special attention to the productive powers of the pupils, because that was how workers could be won over to handicrafts and industrial labour (Kerschensteiner, 1908, p. 140 et seq.). In addition, Kerschensteiner advocated the value of artistic education – one that did not stress a merely superficial semblance of beauty but the ‘honesty of all productive work’ (Kerschensteiner, 1905, p. 508). Such a moral aim demanded a proper form, careful and exacting implementation and solid material (Kerschensteiner, 1905, p. 508).

This was the paramount contribution of the school and of education more generally: To elevate manual dexterity and – far more importantly – to contribute to the national work ethos. Pedagogues responded in that way to the challenge of the ‘social question’ and to socialism.

Kerschensteiner’s demands for school reforms were not original, but he followed the tenor of contemporary discourse as developed and laid out above. He endorsed further schooling primarily oriented to social integration. The strong emphasis on activity in the manual arts and crafts was furthermore intended as a contribution by the school to the promotion of ‘joy in work’. A national work ethos that overcame particularism should draw on the myth of the past, be well-grounded in classicism and be able to morally integrate into contemporary Wilhelmine society. Drawing

² The German Work Federation was an association of architects, designers and industrialists, founded by Hermann Muthesius in Munich in 1907, and was an important precursor of the Bauhaus movement. It attempted to integrate traditional crafts and industrial mass-production techniques under the motto ‘from sofa cushions to the building of cities’.

on Carlyle and Ruskin, industrial work was thereby to receive the revitalising breath of a new soul.

Conclusion

Behind the project of 'work and education' stood another project, oriented particularly to social policy. This implies that industrial development and the development of technology were not central here. Rather, what mattered most was the productive integration of the working classes in society. The social question was conceived as an institutional issue. Motivation for work and a sense of community were to be stabilised by education in schools. In this respect, the criticism of Litt and Blonskij, which associated pedagogical ideas with the state of technology, was inadequate. Instead, it was far more important to conjure up a new vision of community by means of an aestheticised and moralised ethical conception of work. If need be, that vision took on a certain tint and tenor from nationalist and folkish ideas and agendas.

These motives could be effectively bundled together in the education for 'joy in work'. The longing for change was transformed from a wide-ranging socio-political project to something geared to everyday industrial reality. This small-scale romantic utopia did not necessitate any social unrest and upheaval. Rather, it required a new culture, mediated by the dominant classes. The image of the artisan offered itself as the most realistically adaptable project. The farmer was too far removed from the large industrial plant, the entrepreneur was too controversial a figure. But the artisan brought in an element of the old social estate and its sense of honour and community; he was furthermore sanctioned by German classicism and provided a projection screen where economic, artistic and political visions could be combined.

The 'achievement' of pedagogy hence consisted in the translation of this general discourse into pedagogical categories, not just into institutional vessels such as the school for further education, but also into school ethos and instructional methodology. Having said that, pedagogy revealed itself to be less original, more a kind of appendix to discourses in artistic circles and among social reformers. This becomes also evident in Kerschensteiner's works, which should be understood in the context of discourse and discussion of the nineteenth century. His interface was not the pedagogy of the nineteenth century but its economic journalism, a *Publizistik* with a conservative to social-reform-oriented touch. Treitschke's idea of the state, Riehl's conception of estate-anchored morality, Schmoller's gentle enthusiasm for reform and Nostitz's international perspective provided him with the necessary

tools to team up with Naumann, Muthesius and the German Werkbund in a broader intellectual sense after the turn of the century in a re-adapted project of reform for German workers, grounded in an ideal of handicrafts.

Kerschensteiner's plea for civic education (1901), later entitled *Staatsbürgerliche Erziehung der Deutschen Jugend* ('Civic Education of German Youth'), ends with the admonition drawn verbatim from Nostitz: For the sake of the development of the internal life of the state, the upper classes would have to surrender their absolute dominance in favour of a guidance and leadership role toward the lower classes (Kerschensteiner, 1987, p. 77 et seq.).

These ideas of reforms led to a renewal of vocational education that did not focus on the workplace merely. The school, namely the so-called 'Volksschule', contributed to prevent a divergence between the world of work and the world of education, too. It also dealt with a well-balanced curriculum, which conveyed a relevant education for the industrial age. All of these aspects demanded an advancement of the educational system and the perspective to improve education on a regular basis. From today's perspective, it is amazing that handcraft and manual work as a reference point for school reforms and reforms of industrial work reached in service of national integration such a prominent role.

Artisan idylls led by the bourgeoisie were to engender a process of pacification of the working classes. Therefore, it may be regarded as ironical that today this initiative and approach are interpreted from an international perspective as a contribution to the modern work ethos of the Federal Republic of Germany and as the prerequisite for a flexible system of general and vocational education that can cope astonishingly well with technological change.

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Reforming the VET System via National Qualification Frameworks? A Comparison of Germany and Austria

Thomas Deißinger

Issues Determining the Current Development of the German Qualifications Framework

National qualifications frameworks ‘support the objectives of strong and accessible qualifications pathways, a transparent qualifications system, and one that facilitates lifelong learning’ (Keating, 2008, p. 1). In this context, the European Union – with the implementation of the EQF – sees the boundaries between various sectors of the educational and/or training system, including higher and further education, as more and more permeable sub-systems. This premise is based on a specific understanding of ‘competence’ – very similar to the concepts developed in Anglo-Saxon countries, such as Australia and the UK, which are countries with rather ‘open’ training markets without strong formal regulation (Harris, 2001). The idea of a flexible, individual and ongoing acquisition of competences which should be independent from courses also provides the basis for open forms of learning. In this context, which includes new approaches to assessment (Wolf, 1995; Deissinger and Hellwig, 2005; Hellwig, 2006), such as RPL (recognition of prior learning) or APL (accreditation of prior learning), two facets of the debate have become relevant in particular for the German situation and also emerge as problems when it comes to drafting of the DQR published in February 2009:

- The first one refers to the to the problem of interpreting ‘competence’ in different national contexts, i. e. transforming the EQF to a national semantic level, with the specific German tradition and use of ‘competence’ being ‘holistic’ rather than ‘functional’. This includes the creation of a ‘competence matrix’ featuring vertical

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differentiation in reference levels and horizontal differentiation with respect to various competence dimensions;

- The second one has to do with the challenge to define and describe matrix units and to come to terms with the eight levels and three competence dimensions (knowledge, skills, competences) typical for the EQF, as the German framework has now been presented with four competence dimensions (technical competence, methodical competence, social competence, personal competence). Existing 'qualifications' (certificates) now have to be entered into the drafted DQR matrix. This means that qualifications (which are normally strongly input-steered as they are based on training times, curricula, examination modes etc.) have to be translated into notions of competence which have to be aligned with the various levels of the DQR.

The draft quite clearly arrives at a typical notion of competence which underlies the 'philosophy' of VET in the dual system of apprenticeship training in Germany. The understanding of competence hereby has always been linked to 'inputs' rather than 'outcomes' since 'occupational competence' as a result of training 'embodies all that is associated with an occupational identity' (Winterton, 2009, p. 686). Beyond technical issues, there is no doubt that the process of establishing a consensus-based DQR ultimately requires a common understanding and a common will of stakeholders to materialise this understanding of competence in the various fields of education and training, but also to tackle the 'construction sites' of the German VET system. This means that structural tasks directly affecting the DQR are just one element on the 'European pathway' which needs to be taken. Germany is also facing the issue of legal, administrative and political consequences arising from the competence concept and its national realisation.

An alliance of trade unions and the craft sector currently seems to be lining up when it comes to protecting the character, functionality and importance of the dual system of apprenticeship training as the 'heart' of the German VET system (Greinert, 1994). The papers by Esser (2009) and Nehls (2008) are vivid examples for this structurally conservative point of view. Although both tackle the specific topics of alignment and transparency, indicating 'progression' as one of the central objectives underlying the EQF, their major concern is the 'vocational principle' (Berufsprinzip) commonly described as the 'organisational principle' within the German system of VET (Deissinger, 1998). Nehls (2008, p. 50), for example, points out that 'alignment towards competence and employability skills (should not mean) that socially standardised learning processes (in the shape of training regulations) might be replaced by a combination of arbitrary learning objectives'. In his statement, a substantial

fear of modularisation of VET becomes obvious. Nehls also maintains that the DQR should be aligned in a way to 'enable all young people and adults to acquire recognised and high quality competences capable of long-term and marketable application on the labour market within the scope of lifelong learning' (p. 50). Yet, the main concern for relevant stakeholders who function as social partners within the VET system, still seems to be the established structures of the apprenticeship system, which means they are only willing to accept EU terminology in areas where these traditional structures are not at stake.

Given these tensions between a competence-based modular approach and the 'vocational principle' (Deissinger, 2009), the issue of permeability assumes a major role. Esser (2009) refers to the idea of 'removing pillars' (p. 47), although he applies this concept to the demarcation lines between VET and higher education – admittedly a highly relevant borderline within the German educational system – rather than to the demarcations within the VET system as such, which are responsible for the creation of the so-called 'transition system' (Münk et al., 2008). This 'system' has grown significantly in the last 15 years and has become the object of considerable debate in both the academic research and educational policy communities.¹ It is obvious that the problems associated with the 'transition system', with all their implications for social and economic perspectives of young people, will remain a persistent structural challenge for Germany's educational policy in the next 10 to 15 years (Euler, 2011).

One of the reasons for a lack of commitment in the educational debate to tackle this 'construction site' of the German VET system seems to be the perception that 'competence' and 'modularisation' are twins. In fact, 'Competence-based Education and Training' (CBET) clearly is an Anglo-Saxon invention in the VET world and is linked to 'modularisation' in the respective national contexts (Deissinger, 2009). 'Competence' (e.g. in the British context) or 'competency' (e.g. in the Australian context) can be understood as '... the specification of knowledge and skill and the application of that knowledge and skill to the standard of performance ex-

¹ Although the label of 'programmes of measures' or 'opportunity enhancement system' has been attached to the transition system depending on respective points of view, a closer examination of the structures it exhibits makes it clear that there are at least two transitional thresholds which do not deserve to be associated with a real 'transition' or 'progression' perspective: (i) the first one being the transition from vocational training preparation and similar programmes, both in companies, schools and private training facilities, to 'regular' (i.e. formalised and therefore 'full') vocational training within the dual (apprenticeship) system; (ii) the second one being the transition from full-time VET into the dual system accompanied by the important issue of permeability and equivalence between the two major sub-systems of VET in Germany (Deissinger, 2007).

pected in the workplace.' Consequently, CBET itself may be described as '... training which is performance- and standards-based and related to realistic workplace practices... It is focussed on what learners can do rather than on the courses they have done.' This definition (ANTA, 1998, p. 10; Misko, 1999, p. 3) sees the aim of CBET in the delivery of 'outcomes,' which can be combined and measured against standards rather than being linked up with courses, schemes or training institutions (schools, apprenticeships). This outcome orientation also implies new forms of assessment, such as 'Recognition of Prior Learning' or 'Accreditation of Prior Learning' (RPL/APL), mainly through work experience, to ensure the relevance and transferability of skills and knowledge as well as to lead people back into learning. These ideas have been picked up by the 'makers' of the EQF, although it is important to note that attention in the EQF is not simply given to a functionalist understanding of competence: firstly, because 'competence' is seen as a multi-dimensional term; secondly, because competences stand for learning outcomes in a universal understanding, i.e. beyond workplace learning and closely linked to the notion of 'lifelong learning' (Hake, 1999).

This notion of competence implies that learners who complete standards for a qualification are awarded a statement of attainment before they attain a full qualification. It is therefore understandable, given the 'holistic' notion of 'Beruf', that there are also major reservations in the German VET context (once again mainly on the side of trade unions and craft companies) regarding a differentiated observation of the levels of competence between individual training domains as this would affect the traditional formal principle of equivalence between the various training occupations (all in all some 350 in the German apprenticeship system). Esser, for example, (2009, p. 48) suggests a 'scenario 2', which in his view involves following a similar process to that adopted with the 'Bologna qualifications' within higher education, localising both VET qualifications and VET entry entitlements to a specific reference level of the DQR while at the same time allowing various requirement levels only within a defined skills area (e.g. in the sense that a one-year vocational preparation course in the commercial sector would be unambiguously on a lower level than a fully-fledged vocational qualification deriving from a three year course in the apprenticeship system). As this is one of the strong attitudes in the VET policy context in Germany, other issues are closely linked to the belief in the exclusive character of training qualifications in the dual system and the formal value of a 'holistic' competence within the German entitlement system. This goes hand in hand with a lukewarm handling of the issue of informal and non-formal learning, and the fact that comprehensive and reliable accreditation structures and mechanisms even within formalised VET, i.e. above all between full-time VET and apprenticeships,

do not exist at all (Deissinger, 2007; 2010b; Gutschow and Seidel, 2011). The reason for this may be seen in the dominant role the dual system of apprenticeship training plays within the German VET system (Deissinger et al., 2011).

Germany: The Culture of a Long-established Apprenticeship System

With its typical 'learning culture' – quite in contrast with Anglo-Saxon countries – Germany certainly is an 'apprenticeship country' (Harris and Deissinger, 2003). Its institutionalisation as a dual system of VET (Deissinger, 2010a) receives broad acceptance among companies, since it is the most important non-academic route in the post-compulsory sector for those German school leavers seeking for a formal qualification outside the higher education system. These formal qualifications are based on 'skilled training occupations', and the dual system recruits some 60% of 16–19-year-olds (from different school backgrounds including higher secondary education), providing for a generally high level of formal 'intermediate skills' skills in the German labour market (Marsden and Ryan, 1991). Unlike in the UK or in France, where they only stand for a marginal sector within the VET system, apprenticeships exist in nearly all branches of the German economy, including the professions and parts of the civil service.

Institutionalisation and didactical systematisation as well as standardisation, including a uniform examination system, correspond with a 'learning culture' in the German apprenticeship system which makes companies the principal stakeholders in the process of skill formation (Harris and Deissinger, 2003). At the same time, compulsory vocational education provided through school attendance in the part-time vocational school, lasts until the end of the apprenticeship and includes theoretical vocational learning as well as general subjects. Ryan puts this in contrast with the Anglo-Saxon (English) approach to VET: 'A striking difference from Germany is the absence of minimum training periods, such as a three-year programme for bakers. Similarly, apprentices need not take part-time technical education' (Ryan, 2001, p. 136). As part of compulsory post-secondary education, the apprenticeship system is strongly regulated through the school acts of the federal states, and – with respect to company-based training – the Vocational Training Act (Deissinger, 1996).

It is with respect to VET in schools that the German VET system appears as a segmented entity. Due to constitutional and political reasons, full-time and part-time VET still remain more or less unconnected, even if the local or regional vocational part-time school and the various types of full-time schools are in most cases phys-

ically assembled under one roof in so-called vocational school centres (Deissinger et al., 2006). Against the background of missing links between various forms and sub-systems of VET, the federal government, in 2005, put a new Vocational Training Act into operation, containing the following intentions (Bundesministerium für Bildung und Forschung, 2005):

- the inclusion of vocational preparation schemes within the scope of regulation of the law and with it the implementation of an appropriate system of qualification modules;
- the transferability of credits obtained in school-based VET via by-laws of the federal states;
- a more intense internationalisation of VET by providing opportunities for apprentices to undergo part of their vocational training abroad and
- an ongoing modernisation of examinations by establishing the 'extended' final examination.

Modernisation within the dual system is currently taking shape mainly on the curricular level, including the concept of 'learning fields' in the vocational school curriculum, which abolishes the traditional orientation along subjects and is meant to render instruction in schools more 'realistic' (Huisinga et al., 1999). New or revised training schemes within the system of 'skilled training occupations' now even allow for modest ways of modularisation. Implanting modules within training schemes as didactical units with a mandatory but optional character (like in the IT occupations created in 1997) no longer is seen as incompatible with the traditional idea of holistic skill formation and the 'occupational orientation' of training (Euler, 1998, pp. 96 et seq.; Deissinger, 1998). However, there are other suggestions using modules in a more open manner, and there is agreement in the research community that the system has to become more flexible (Euler and Severing, 2006; Baethge et al., 2007). In fact, the German VET system has hardly any reliable legal or curricular links between VET and higher education in terms of progression, inclusion and permeability of the education system. Another feature concerns unreliable links between different streams within VET, especially when it comes to the valuation and accreditation of school-based full-time VET or vocational preparation and integration measures. A serious deficiency may also be seen in the lack of pedagogical or curricular differentiation within the apprenticeship system in terms of skill levels and duration, also with respect to the special needs of students, including structurally disadvantaged young people. Furthermore, there are no clear relationships, let alone crediting, between non-formal or informal learning and formal VET.

As the EQF has been set up with the idea of improving transparency and comparability of qualifications and certificates, all kinds of 'open borders' may be considered as serving this political strategy. Besides, enhancing permeability and parity of esteem between general and vocational education may be seen as one of the essentials of Europeanisation (Busemeyer, 2009, p. 5). One tool hereby is the implementation of 'hybrid qualifications.' These qualifications so far have played a rather subordinate role within the German education system and do not appear on the current German educational policy agenda. This comes as a surprise as other European countries, including Switzerland and Austria, have successfully implemented and gained experience with hybrid pathways. Progression to higher education in a formal manner in Germany through a fully fledged VET course is limited because there is no direct pathway from apprenticeship to university or polytechnic. Instead, students need to take detours, either before or following an apprenticeship in the dual system, once they want to proceed to higher education. Basically, only two types of institutions provide access from the vocational school system to higher education (full-time not part-time): 1) the 'Wirtschaftsgymnasium' and the 'Technisches Gymnasium' (commercial or technical vocational high school), and 2) the 'Berufskolleg' or 'Höhere Berufsfachschule' (vocational college). In the first case, students obtain a general higher education qualification certificate (Abitur), in the second case they go for a lower-level polytechnic entrance qualification (Fachhochschulreife) together with a so-called 'assistant qualification' (Deissinger, 2007). Only the latter may be considered to have the quality of a 'hybrid qualification' since it is linked to an occupational qualification (which does not yet have any substantial value on the labour market as it is not an apprenticeship qualification).² It is obvious that the strong focus on traditional apprenticeships as the gold standard for employment renders these pathways largely irrelevant.

² Against the background of increasing qualification needs, the issue of permeability between vocational and general education certainly has become a major focus of European education and training policies and one of the objectives of the EQF. Our Leonardo Project 'Hybrid Qualifications' – increasing the value of Vocational Education and Training in the context of Lifelong Learning (2009–2011), including Germany, Denmark, England and Austria, has been designed to improve understanding of institutional links between higher education, VET and working life across Europe. The specific focus of our study is linked to the topic of this paper and emphasises structures and processes which help to combine VET with qualifications leading into higher education in the sense of a double qualification (see also Deissinger et al., 2011).

Austria: The 'Two-pillar' Concept within the National VET System

Despite its cultural and historical similarities to Germany, Austria is remarkably different with regards to the relationship between full-time and part-time VET. This is even more surprising as only few countries in the European Union have kept structurally highly developed dual systems which have emerged from the traditional apprenticeship culture of the Middle Ages. Besides Austria, Germany and Switzerland, this term may only be used with reference to the Danish and the Dutch VET system (Deissinger, 2010a; see also Steedman, 2010 for an overview of apprenticeships). Due to a high degree of employer involvement in the context of a 'coordinated market economy' and a 'collectivist training regime, which is linked to portable and certified occupational skills' (Trampusch, 2009, pp. 375 et seq.), these VET systems have the advantage that they are able to impart holistic competences needed in the world of work. Especially Anglo-Saxon researchers and observers have positive perceptions of these apprenticeship systems, not only because enterprises play a major role but also because training commitment is partly compensated for by making use of the productive contribution of trainees during the training period, which is specifically manifest, at least in the case of Germany, in quite a number of occupations of the craft sector. If one looks at Switzerland, Austria, but also the Northern province of Italy, the Alto Adige (Südtirol) with its German-speaking population, we find similar structures, once again mainly in the craft sector. Switzerland is the most manifest example of an 'apprenticeship country'. Here, some 70% of young school leavers enter the apprenticeship system (called 'Berufliche Grundbildung' or 'vocational foundation training' in some 250 occupations); in the German-speaking cantons this percentage even exceeds 85% (Gonon and Wettstein, 2009, p. 112). In Austria, some 40% of the school-leaving population normally undergo training in one of the 260 training occupations currently on offer after compulsory schooling. As in Germany, Austrian VET policy enforces a continuous renewal and adaptation of the contents of this training to keep it up-to-date (Archan and Wallner, 2007). However, full-time VET plays a major role in the VET system, and therefore the Austrian VET system may be described as a 'two-pillar concept' (Aff, 2006).

Austria's VET system, as far as apprenticeships are concerned, has many similarities with Germany, due to many parallel historical developments going back to the Middle Ages. Also, Austria is a federal state although the central government has a major say in educational matters, including the regulation of schools involved in VET. The more 'holistic character' of the Austrian VET system may be an expres-

sion of this comparatively strong state regulation, but it is also the structure of the system itself which appears more homogeneous than in the German case. Generally, observers call it a 'two-pillar system' (dual system plus full-time VET) or even a 'three-pillar system', since in fact two types of full-time vocational schools (representing different levels of educational achievement and different course structures) stand in par with the dual system, which is not as highly rated, socially and economically, as in Germany and is not seen as the most relevant pathway into skilled employment (Rauner, 2008, p. 24).

In Austria more students attend full-time VET than the apprenticeship system, and more undergraduates in higher education come from vocational schools than from general education.³ The two institutions providing this alternative pathway for school-leavers are the 'Berufsbildende Mittlere Schule' (BMS or vocational middle school) and the 'Berufsbildende Höhere Schule' (BHS or vocational high school/college) (Aff, 2006). The BMS is a three-four year type of school which, besides a vocational qualification, offers the opportunity, through an additional examination called the 'Berufsreifeprüfung', to obtain a 'hybrid qualification' which in turn leads to a general university entrance qualification (Klimmer and Schlögl, 2001). The BHS takes five years, and offers a curriculum, like the BMS, that combines general studies with theoretical and practical vocational learning. The BHS includes 'practice firms' (Übungsfirmen), a kind of complex learning environment which has also been implemented in the full-time VET system of Germany, however with little success with respect to raising the labour market value of school-based (non-apprenticeship) qualifications. The BHS with its crucial institutional realisation in the commercial sector, the HAK (Handelsakademie) is a highly attractive training option since it offers entry into relevant labour markets, such as tourism, and also entry to all universities. In the case of a follow-up entry from the BHS to a polytechnic (Fachhochschule) there is even the option to get prior learning from the vocational school course accredited towards the academic course. Another feature which shows how closely BHS and higher education seem to be interwoven is the use of occupational titles commonly reserved for the tertiary system, such

³ In 2007/08, approx. 20% of all Austrian 10th year students attended a secondary academic school (AHS), which provides them with a general university entrance qualification (Matura). The striking feature within the Austrian education system, however, is that the majority of students in higher secondary education are located within vocational education. Two out of five students undergo vocational training within the dual system, whereas some 12% attend a vocational middle school (BMS) taking three to four years, and some 35% enter a VET college (BHS) which takes five years (Bundesministerium für Unterricht, Kunst und Kultur, 2009, p. 18).

as 'Ingenieur' (normally a diploma qualification equivalent to a Master), which are granted at technical high schools (Elsik and Piskaty, 1998).

Graduates from the commercial academies (Handelsakademien), which are the business-oriented type of the BHS, undergo occupation-based training as well as general education that enable them to attain the university entrance qualification for all subjects (Allgemeine Hochschulreife). The five-year courses here take longer than in the higher levels (Sekundarstufe II) of general education. If one looks at the student population in recent years, the numbers prove that both students and parents obviously value these qualifications and it is in fact the five-year course which has become increasingly attractive. As a matter of fact, the 'labour market integration ratio' of BMS and BHS rose from 21 to 57% between 1970 and 2005 (Hoppe 2005). It is therefore the BHS which is seen as the 'winner' of this shift away from both general higher secondary education and the apprenticeship system. With the introduction of Bachelor degrees in the wake of the 'Bologna process', however, the commercial academies might be coming under increasing pressure as new qualifications could replace the traditional ones, particularly in the more sophisticated occupational areas.

One of the unique strengths of the Austrian VET systems certainly is that BMS and BHS co-exist alongside the dual system without becoming a 'rival' for the apprenticeship sector. According to experts, the Austrian VET system, with its 'two-pillar concept', offers greater potential for curricular and educational innovation than the strongly traditional German system (Aff, 2006, p. 21). It seems therefore that the Austrian VET system could serve as a 'best-practice-approach' for the future development of full-time VET in Germany.

Concluding Remarks

From a critical perspective, leaving aside political arguments and focusing on pedagogy, 'Europeanisation' of the German educational landscape in connection with the DQR has to consider two issues. First, it seems essential to secure and further develop those aspects of the VET system which are viewed as being purposeful in functional, pedagogical and societal terms. Second, there also needs to be willingness to embrace something new in order to take a constructive approach to overcoming national problem areas and working on the above-mentioned 'construction sites' by referring to 'Europe' as a motivator and blueprint. It is also important, however, to avoid simply copying a 'philosophy' with uncertain benefits because it clashes with traditional values and features of the VET system.

Quite clearly, there are signs that VET policy in the case of Germany is at least rhetorically willing to proceed on the 'European path of change'. The consultations on the German Qualifications Framework (GQF), under the umbrella of both the Federal Ministry of Education and Research (BMBF) and the German Education Ministers Conference (KMK), are a proof for this. Nonetheless, the relevant actors (above all trade unions and employers organisations) in Germany still find it hard to conclude from the EQF blueprint that introducing different levels of occupations or occupational profiles or even designing training according to more explicitly modular principles would be corresponding measures that could help realise the 'competence concept' underlying the EQF. A study commissioned by the Federal Ministry of Education suggests that all kinds of VET, independent from the venue and the duration of the training measure, should be re-aligned in a national modular system, without giving up the option to get trained in a 'full occupation' (Euler and Severing, 2006).

For Germany, taking the European framework issue seriously means that permeability – both inside and outside the narrower scope of the VET system, inevitably has to become a crucial feature of educational policy, with the aim to enable students to travel from one system to the other along specified progression routes. For this purpose, the following questions have to be raised and discussed seriously:

- How should the increasing pluralism be tackled within the VET system (apprenticeships, full-time school based VET, vocational training preparation and other 'measures') and what perspectives have to be taken for an adoption of the so-called 'transitional system' within the DQR?
- What policy and what kind of didactical tools are required to give appropriate consideration to the function of school-based VET within the overall VET system, especially with regard to interlinkages and accreditation mechanisms, and how is it possible to enhance its value substantially?
- To what extent can informally acquired competences be linked with the certification structures of conventional educational pathways and what kind of certification or accreditation system is needed for this purpose, including institutional and legal areas of responsibility?

The 'demarcation lines' typical of the German VET system are a main contributing factor in making VET which takes place outside the dual system, i.e. in vocational schools, one of the problem zones within the German VET system. Although school-based vocational training is recognised in terms of its educational policy function, it has traditionally suffered from the subordinate role accorded to the training function of school-based qualifications (Deissinger, 2007, 2010b). Against

the 'hegemony' of the dual system, school-based occupations according to federal state law in particular are still being measured against apprenticeships and hence do not possess a value as such. In contrast to vocational schools in Austria (Aff, 2006), full-time vocational schools in Germany only fulfil classical training tasks to a very limited extent. The emphasis away from vocational training in a traditional labour-market related sense indicates the intention (in particular in the southern federal states of Germany) to lead students to a follow-up vocational training course in the dual system through a vocational full-time school, and students have a relatively clear perception of this. At the same time, this means that occupations which are regulated in accordance with federal law (Vocational Training Act) and for which training takes place at full-time vocational schools produce different 'values' on the labour market compared to training courses constructed under federal state law, which are in a strong competitive relationship with the state-recognised training occupations based on the Vocational Training Act, and therefore with the dual system.

In my view, the DQR with its focus on outcomes instead of courses also calls for a differentiated form of modularisation aligned towards the principle of skilled occupations, which does not need to be a copy of the Anglo-Saxon modular approach (Deissinger, 2009). A normative argument, which I am able to follow for pedagogical reasons, may be used to underline this: A paper produced by the Federal Catholic Youth Social Work Association (BAGKJS, 2009) has issued, with respect to the DQR, a warning not to lose sight of educational opportunities for disadvantaged young people, which are over-represented in the 'transition system'. This exhortation comes up with demands to adopt the basic ideas of the EQF and DQR in an abridged form as well as to become aware of the 'educational biography approach' and thereby to the concept of competence. Although no direct adoption of the outcome principles originating within the Anglo-Saxon VET system policy context is required for this purpose, we need to deal comprehensively with the 'construction sites' within the German educational and VET systems. With regard to the 'transition system', my view is that the major guiding principle should be that aspects such as traditions, areas of responsibility and trust in something which is fully tried and tested do not abandon those young people who do not benefit from a 'regulated system' of vocational education and training. At the same time, on a higher level of the DQR hierarchy, rethinking the links between VET and higher education seems essential.

The case of Austria proves that a well-functioning apprenticeship system does not need to be in conflict with demanding VET courses leading to 'hybrid qualifications' and therefore contributing to maintaining a highly trained workforce on all levels of commerce and industry. The two countries do not just differ on ac-

count of their institutional diversity in the VET system and the relevance of various modes of vocational training (on-the-job/dual and off-the-job/school-based respectively), but also in their respective reform strategies which seem to be influenced by the European agenda in different ways. It seems that Austria is ‘more prepared’ for transferring this agenda, in particular when it comes to ‘hybridity’, and we may agree with Trampusch that ‘in Austria, Europeanization happens as institutional change by default’ rather than as a deliberate ‘proactive’ reform process (Trampusch, 2009, pp. 386 et seq.). It needs to be added – without entering a political science analysis – that the latter is certainly visible in Germany, although still more on rhetorical than practical levels.

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Vocational Education and Training in Poland During Economic Transition

Sławomir Kurek and Tomasz Rachwał

Introduction

Economic transition from central planning to a market economy requires not only the introduction of legal and economic changes, but also the training of suitable staff and the entire society for new tasks. Vocational education and training (VET) of young people is, though, particularly important given the market economy conditions of the modern globalising world. Economic transition, European integration and globalisation, as well as the factors associated with the creation of a knowledge-based economy and developing information society, require radical changes in the Polish system of education. These changes predominantly concern VET due to its specific features developed during the communist centrally planned economy. Before 1989, both in Poland and in other Central and East European states, education and training was developed to meet the needs of centrally planned economies. VET was part of large state-owned companies with relatively low levels of innovation and productivity, which employed large numbers of workers (Gandini, 1999).

In the centrally planned economy, different types of basic vocational schools existed, including many company-owned ones which prepared their future employees according to the company's needs. Apart from theoretical knowledge, these schools provided training courses preparing pupils to work within a given industry, such as

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coal mining, metalworking or the textile industry. These large industrial companies supported such schools not only in terms of the curriculum; they also participated in financing the purchase of machinery and devices used at the company for pupils' training. The firms also offered apprenticeships to young people from technical vocational schools, i.e. the vocational schools which would also offer their graduates general certificates of secondary education (the *Matura* exam). Such a situation favoured vocational schools. It also permitted permanent contacts for teachers and pupils with employers on the labour market. Graduates often had an offer of employment at these companies straight after completing their vocational education.

Over the twenty-year-long period of economic transformation, companies were forced to adapt to the conditions of competitiveness characteristic of the market economy. As a result, they had to implement intensive restructuring programmes. In numerous cases they also had to face organisational and financial difficulties, and thus ceased their involvement with co-financing vocational education. Introducing costly restructuring processes, they often got rid of burdensome non-productive assets, including schools linked to companies (cf. Kwiatkowski, 2000; Zahorska and Walczak, 2005).

Consequently, there are very few vocational schools in Poland in which companies are deeply involved in the process of education. Considering the relatively high unemployment during this period of transformation, entrepreneurs carefully select applicants by introducing high entry requirements. As a result the majority of good vocational secondary education has been merged with the system of general education. This process also included institutions supervising schools in a given area (generally local authorities, since the administrative reform in 1998 *powiat* authorities, i.e. the lowest unit of administration). Of course, the changes also affected pupils themselves.

However, as is widely assumed, the development of an effective system of vocational education without strong, direct cooperation with entrepreneurs is impossible (cf. OECD, 2010; Wesselink et al., 2010; Woźniak, 2000). This is the case simply because it is the employers who know best what qualifications they require from prospective employees. Along with the fast technological progress associated with the information phase of the development of civilisation, the list of skills essential for gaining employment is constantly growing. Apart from those directly connected with a specific job, graduates of vocational schools require additional skills such as a good command of foreign languages, a driving licence and proficient use of ICT, including sophisticated computer programs.

Apart from professional skills, employers also expect graduates to have certain personality traits, including entrepreneurship, reliability and a willingness to constantly improve their qualifications. As a result, there is a need for employers to be

involved in creating both school curricula and educational standards for individual professions, as well as keeping close contact with vocational schools. Moreover, strengthening the existing or creating new links between vocational schools and research institutions would seem to be important (Kwiatkowski, 2008).

Considering the above developments, it seems crucial to look at how the economic transformation and educational reform implemented in 1999 influenced the level of vocational education in Poland. Therefore, the aim of this paper is to assess to what extent the changes in VET contributed to the better preparation of pupils for the changing national labour market. The analysis considers both organisational and curriculum changes. However, as a detailed analysis of curricula changes would require wide research on several dozen programmes of vocational education, this analysis focuses on organisational and general curriculum changes, rather than school curricula for individual professions. Firstly, the position of the vocational education system in Poland is presented both before and after the reform in 1999. Secondly, the analysis concentrates on the changes in the number of VET schools and pupils and the failed experiment of specialised secondary schools. Finally, the paper ends with a SWOT analysis of VET in Poland.

VET in the Education System of Poland

Until the end of the 1998/99 school year, a graduate of an eight-year primary school could choose between the following options of further education (see Fig. 1):

1. Four-year general secondary school (lyceum), at the end of which pupils could take the *Matura* leaving exam and be awarded a certificate of general education;
2. Four-year secondary schools of another type, i.e. vocational lyceum and, less often, a technical lyceum which prepared graduates to gain employment as skilled workers or workers with equivalent qualifications. They also enabled their pupils to take the *Matura* leaving exam and obtain the certificate of general education;
3. Five-year technical vocational school, where pupils could acquire vocational qualifications at secondary level, complete general secondary education and obtain a *Matura* certificate;
4. Three-year vocational school, which gave pupils vocational qualifications in a given profession.

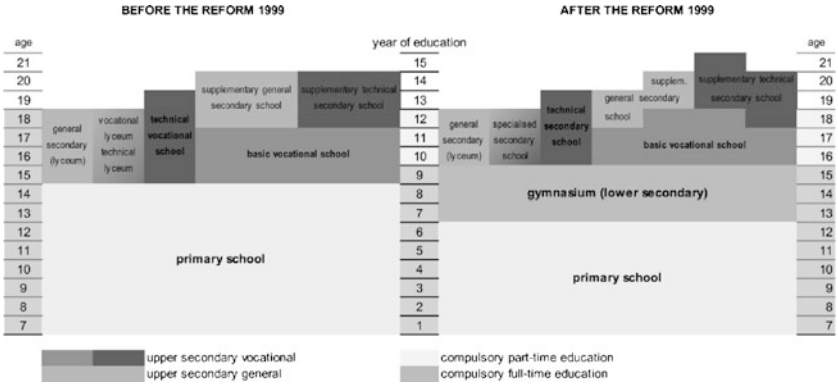


Figure 1 Education system in Poland before and after the 1999 reform (Source: own compilation)

The three-year vocational school also enabled people to continue education at:

5. A three-year supplementary general secondary school or three-year (alternatively two-and-a-half-year) supplementary technical vocational school, graduates of which could sit the *Matura* exam. In the latter case, having passed the vocational exams graduates received a diploma of vocational education, as did every other pupil completing five-year technical vocational school.

Thus, the types of school mentioned in points 2, 3, 4 and 5 constituted vocational education.

The education reform of 1999 moved post-gymnasium education, including VET, into the management of poviats, the newly established self-government unit of administration situated between the *gmina* (lowest) and *voivodeship* (highest) administration tiers. However, poviats were given relatively weak powers and financial resources. In accordance with the reform, vocational education should give way to general education. This was to increase the schooling rate at higher levels of education and, as a result, the percentage of the population with higher education (this indicator was then much lower than in other more economically developed countries of Europe).

Following the 1999 reform, after completing six-year primary school and three-year gymnasium a pupil can select one of the following types of secondary schools (Fig. 1):

1. Three-year general secondary school, which enables pupils to take the *Matura* exam and obtain a certificate of general education;
2. Three-year specialised secondary school, providing education in general vocational specialisations; graduates, having passed the *Matura* exam, are awarded a certificate of specialised secondary education;
3. Four-year technical secondary school, where pupils can acquire vocational qualifications at secondary level and take the *Matura* exam;
4. Two-year or three-year basic vocational school, in preparation for further vocational training.

In addition, after completing vocational school a pupil can continue his/her education at two-year or three-year supplementary general secondary school, or three-year or four-year supplementary technical secondary school, graduates of which can sit the *Matura* exam.

A comparative analysis of both systems indicates that apart from the changes associated with the length of education at each stage, a new kind of school was created, i.e. a three-year specialised secondary school providing general vocational education. Educational authorities assumed that young people would be moving from specialist vocational education towards lifelong learning while already pursuing a career. It turned out, however, that introducing these schools was not a good idea, and their closure is being planned. Simultaneously, as Osiecka-Chojnacka (2007) noted, lifelong learning did not become a subject of interest to reformers. As a result, the reform of VET is recognised as the least well-conceived and most controversial element of the planned changes. The analysis of vocational education facing problems of the labour market conducted by Osiecka-Chojnacka (2007) indicates that the reform was met by criticism from some scholars, who made the following observations:

- It was not based on analyses and forecasts of the labour market, and disregarded the fact that there will always be a demand for various vocational professions;
- It did not follow European standards, as EU states' secondary education is dominated by vocational education, and popularising full secondary education does not mean promoting exclusively general secondary education;
- It did not result from realistic evaluation of young people's abilities, as some simply cannot meet the requirements of secondary school education.

According to Osiecka-Chojnacka's (2007) criticism directed towards the VET reform, the government was guilty of wishful thinking. She based her conclusions on the assumption that at a local (poviat) level VET would adapt to the needs of the

labour market. The Ministry of National Education (MEN) is consistently limiting its control over the situation of vocational schools. It claims that the structural adaptation of education to meet the needs of the economy predominantly depends on good cooperation between schools, local school authorities and labour market institutions. The fact that the mobility of workers will be growing and that Poles can now operate not only on a local, but also on the national and European labour market, is ignored. Moreover, Osiecka-Chojnacka pointed out that an analysis of the problem of bearing the costs of the reforms was missing. The authors of the reform did not take into consideration the long-term effects of insufficient financial support for education, and hence they did not foresee the role local authorities would have in educational policy, e.g. by taking decisions regarding school closures.

In the end, the education reform of 1999, together with the major administrative reform introducing the three-tier system in the same year, brought VET under the control of local authorities. This considerably influenced a change in the number of schools and pupils within the vocational education system.

Changes in the Number of VET Schools and Pupils

The processes of restructuring and liquidation of many companies which supported vocational schools and employed VET graduates took place during the last decades of the twentieth century. This reduced interest in education of this type amongst young people and brought a reduction in the number of basic vocational schools in Poland (Fig. 2).

At the same time, the number of general secondary schools and, until 2000, of other vocational schools offering the *Matura* exam (mainly technical schools) increased. The effect of the 1999 reform, the main purpose of which was popularising general secondary schools, was that since 2002 a significant fall in the numbers of technical schools and specialised secondary schools has been observed.

School closures (also including organisational changes by combining two or three schools into one) also result from a fall in the number of young people of school age. This change is associated with a decline in population, which started affecting secondary education in the first decade of the twenty-first century.

However, the structural analysis indicates that the rate of technical and specialised secondary schools in the total number of secondary schools decreased within five years. At the same time, however, a rise in the percentage of basic vocational schools took place (Fig. 3).

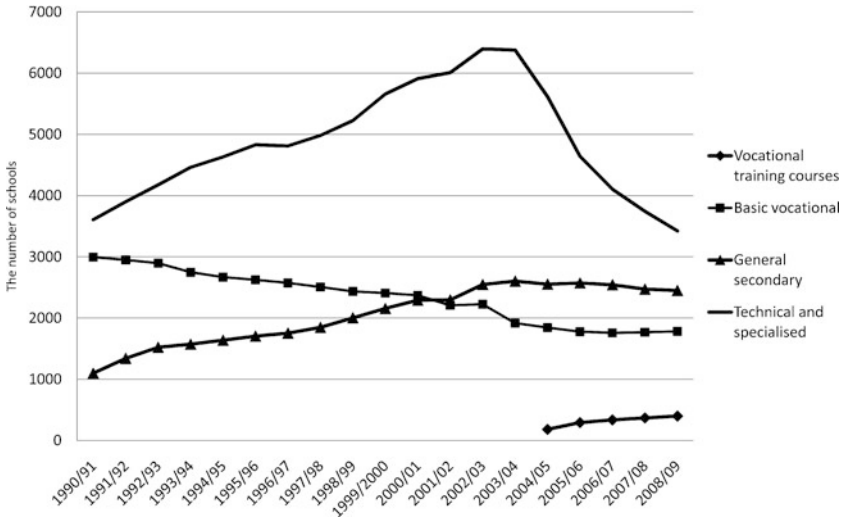


Figure 2 Changes in the number of post-gymnasium schools in the years 1990/91–2008/09 (Source: own compilation based on GUS data)

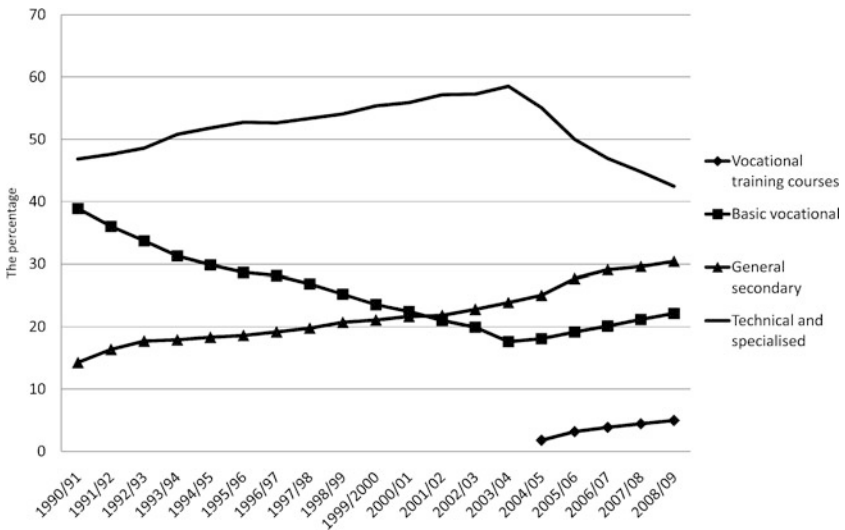


Figure 3 Changes in the structure of post-gymnasium schools in the years 1990/91–2008/09 (Source: own compilation based on GUS data)

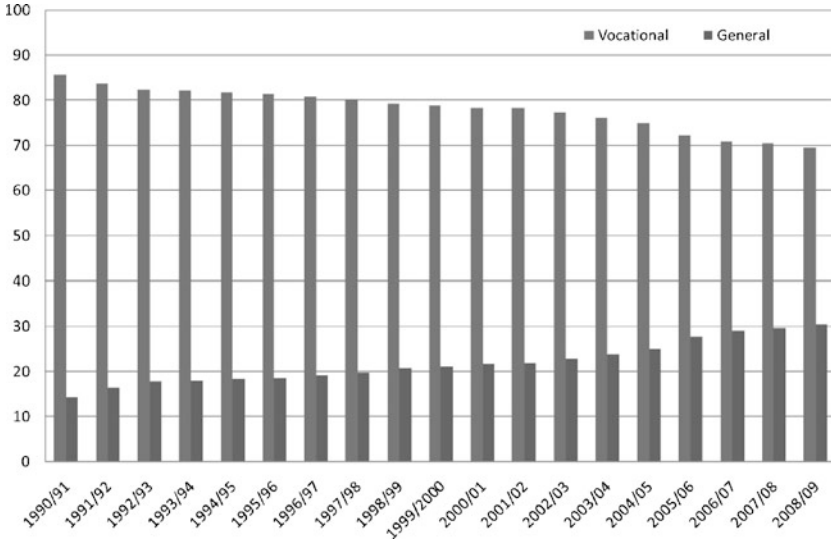


Figure 4 Vocational schools in relation to general secondary schools in the years 1990/91–2008/09 (%) (Source: own compilation based on GUS data)

Generally, however, economic transformation meant vocational schools reduced their share in the structure of secondary education in favour of general secondary schools. The drop went from over 85% in 1990/91 to under 70% in the 2008/09 school year (see Fig. 4).

One should emphasize, however, that vocational schools still constitute the majority, i.e. 70% of post-gymnasium schools. Technical schools and specialised secondary schools constitute 43%, while basic vocational schools make up 22% of post-gymnasium schools (see Fig. 5).

It is worth noting that the relative fall in the number of vocational schools was smaller than that of the number of pupils at these schools. An analysis of the changes in the number of pupils by school types reveals a greater fall in the number of pupils attending basic vocational schools (Fig. 6) than in the number of these schools mentioned earlier (Fig. 2). Consequently, the decrease in the proportion of pupils at basic vocational schools in the total number of pupils of secondary schools was also more significant. It fell from over 40% down to 11% in 2003/04 (Fig. 7).

From the school year 2004/05, however, a slight increase in the proportion of pupils of basic vocational schools in the total number of pupils was recorded. This

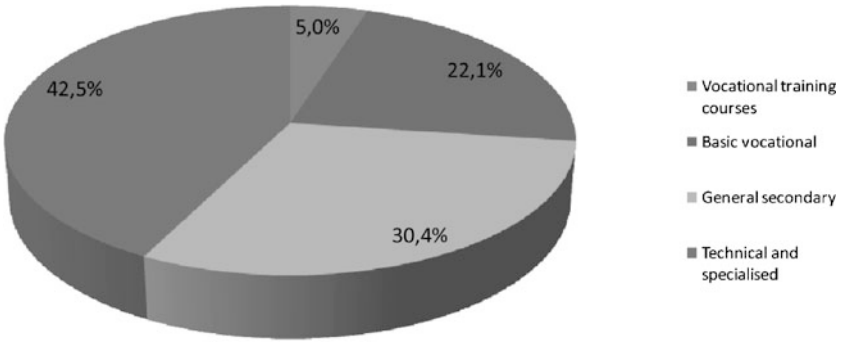


Figure 5 Structure of post-gymnasium schools by types in the 2008/2009 school year (Source: own compilation based on GUS data)

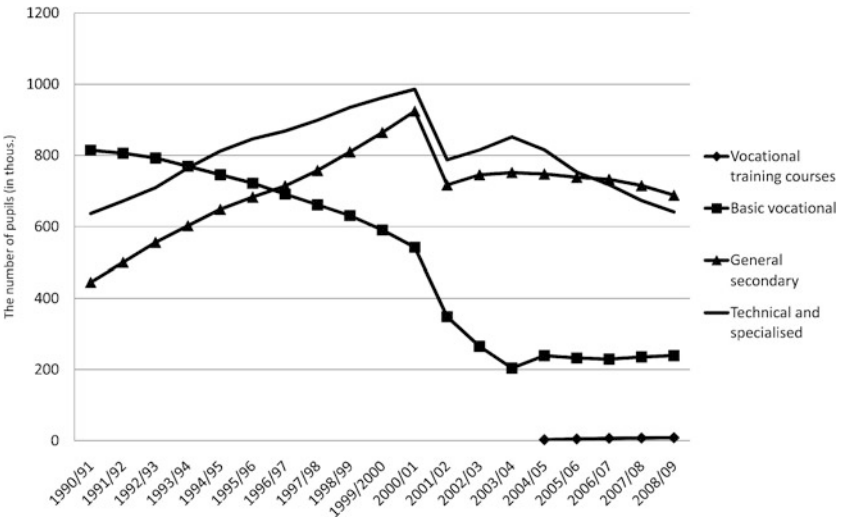


Figure 6 Changes in the number of pupils at post-gymnasium schools by types in the years 1990/91–2008/09 (Source: own compilation based on GUS data)

is a consequence of action undertaken in order to stop and even reverse marginalisation of vocational education triggered off by the 1999 education reform. This growing interest in VET was a direct consequence of shortages in the labour force in various specialisms, particularly felt after Poland joined the EU in 2004. The

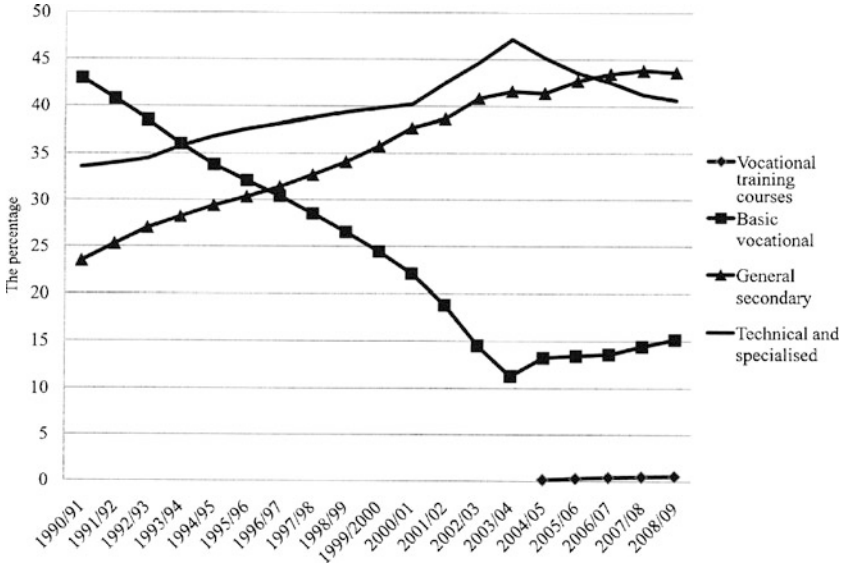


Figure 7 Changes in the structure of pupils of post-gymnasium schools in the years 1990/91–2008/09 (Source: own compilation based on GUS data)

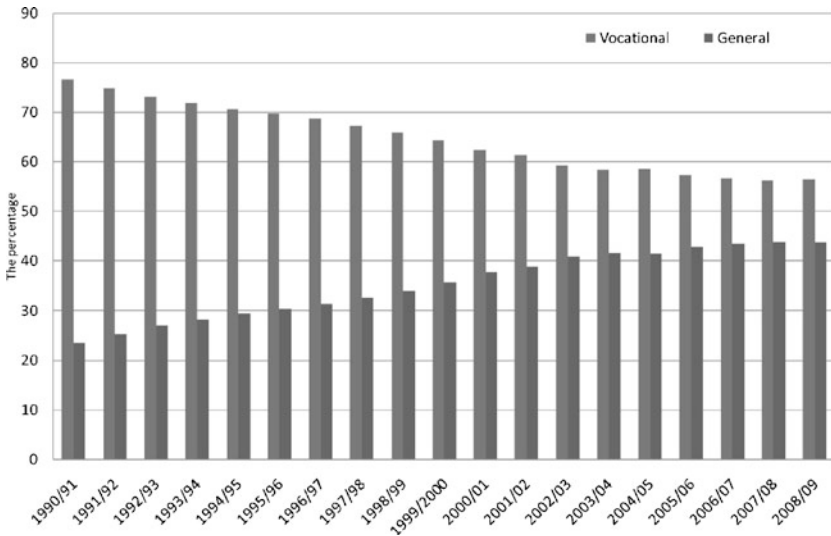


Figure 8 Pupils of vocational schools in relation to pupils of general secondary schools in the years 1990/91–2008/09 (%) (Source: own compilation based on GUS data)

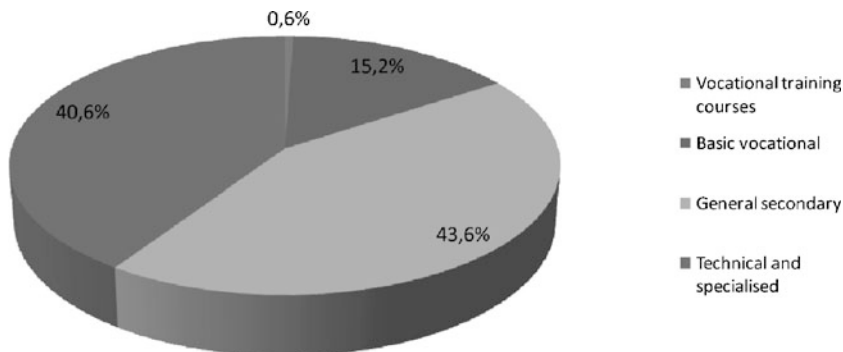


Figure 9 Structure of pupils at post-gymnasium schools by school types in the 2008/2009 school year (Source: own compilation based on GUS data)

economic prosperity of the post-accession years and the migration of many specialists (mainly to those EU states which opened their labour markets for the new EU countries), left Polish employers with shortages of qualified workers.

This problem concerned not only professions in high-tech industry or ICT services (such as computer specialists or electronics technicians); it also referred to other professions, such as drivers or representatives of the construction industry. This increased the interest of pupils in VET and made the educational authorities aware of the need to take action to raise the attractiveness of this type of education.

Generally, however, the entire period of economic transformation reduced VET's share in the structure of general secondary education, in terms both of the number of schools (Fig. 4), and of the number of pupils (Fig. 8).

A tendency towards evening out the proportion is noticeable. In the 1990/91 academic year pupils of vocational schools constituted circa 75% of the total number of pupils, and in 2008/09 only circa 56% (see Fig. 9). Pupils of basic vocational schools constituted mere 15% of the total number of pupils that year. Similar tendencies are observed at schools for adults (see Figs. 10 and 19.11), where a fall in the number of basic vocational schools and since 2003/04 of technical and specialised secondary schools was recorded. A decrease in the number of students at these schools followed.

As was mentioned earlier, the change in the number of vocational schools and their pupils is also a consequence of demographic transformations, i.e. the period of demographic low reaching secondary schools. Since 2000 a fall in the number of

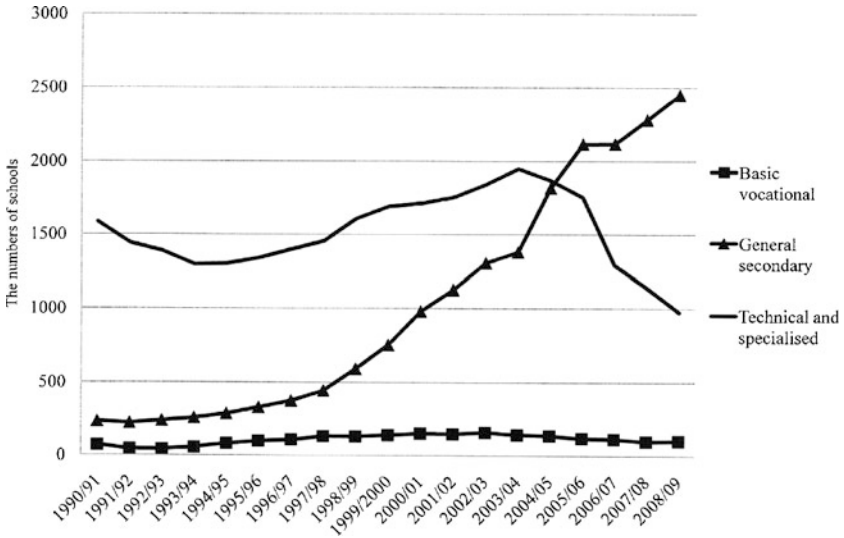


Figure 10 Changes in the number of post-gymnasium schools for adults by school types in the years 1990/91–2008/09 (Source: own compilation based on GUS data)

people aged 16–18 was observed (see Fig. 12). Nevertheless, the calculated dynamic indexes indicate that the fall in the number of this population group in the years 1990–2008 was down to 91%, and the number of pupils of vocational schools was reduced by over one third (down to 61.2%), while the number of pupils of general secondary school increased by over half (up to 154.6%).

There is no doubt that the processes associated with the transformation of the economic system in Poland, as well as the reform of the educational system introduced in 1999, decreased the position of vocational schools¹.

¹ Note: the irregular fall in the number of pupils in the year 2001 resulted from introduction of a reform – one generation after eight years of primary education did not go to secondary school, but was moved to the third class of gymnasium, whereas earlier pupils had entered secondary school after eight, not nine years of education.

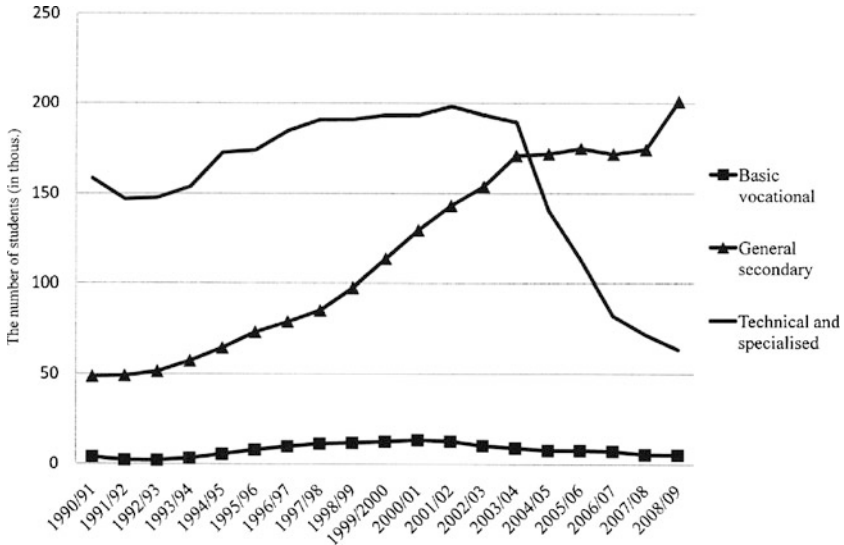


Figure 11 Changes in the number of students of post-gymnasium schools for adults by school types in the years 1990/91–2008/09 (Source: own compilation based on GUS data)

Specialised Secondary Schools – A failed Experiment

As mentioned above, the reform of the education system in Poland in 1999 introduced a new type of school. This was the specialised secondary school, a peculiar merger of a general vocational school with a general secondary school which would enable pupils to receive general vocational education as well as take the *Matura* exam and move on to higher education institutions. Such an integration of general and professional education was also observed in other EU countries (Brockmann et al., 2008; Kwiatkowski, 2000). In those schools a gymnasium graduate can choose one of fifteen profiles of general vocational education according to his/her interests and talents or plans concerning further education or career. The profiles include environmental management, economy and administration, electronics, electronic and technical specialisation, clothes design, landscape architecture, forestry and wood technology, mechanic production techniques, mechatronics, food and agriculture, social science, transport and logistics, services and economy, information management, artistic and applied crafts in metal.

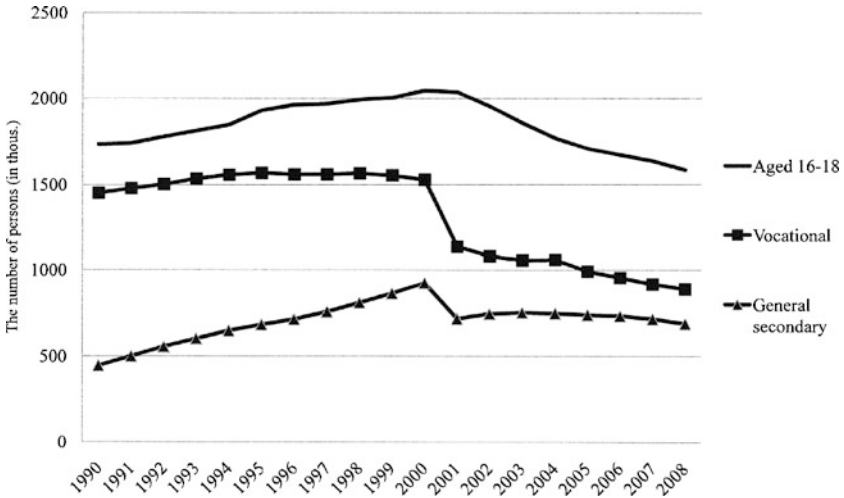


Figure 12 Changes in the number of pupils of post-gymnasium schools in relation to people aged 16–18 in the years 1990–2008 (Source: own compilation based on GUS data)

Unfortunately, the attempt to combine general education (i.e. with good preparation to the *Matura* and higher education) and vocational education failed in the case of these schools. Specialised secondary schools are generally perceived as being at a low level and thus as neither giving the chance to pass the *Matura* nor that of taking up a job. Simultaneously, they show exceptionally low rates of progression to the next class. Moreover, in recent years a sudden decrease of interest in these schools was observed on the part of gymnasium graduates. For example in the 2002/03 school year, specialised secondary schools were chosen by 16% of gymnasium graduates, while in the 2008/09 school year only a little over 3% chose this route. An analysis of the way these schools function shows that the majority of candidates for specialised secondary schools have poor results in the gymnasium leaving exam. Katarzyna Hall, the Minister of National Education (MEN), suggests, however, that ‘only integration of both courses of education – general and vocational – meeting the needs of learners, will make it possible to equip pupils with crucial competences and will give them a reliable vocational education, moving vocational education close to the needs of the labour market’ (MEN, 2010, p. 5). This means that vocational education will try to combine these two courses, vocational and general. After completing gymnasium education, pupils will be able to continue their education at a general secondary school or move to general education

integrated with vocational education at a technical vocational school (preparing for the *Matura*) or to a basic vocational school. So only two main types of vocational schools are being planned, although the closure of specialised secondary schools has not yet been decided on.

SWOT Analysis of VET in Poland

This necessary modernisation of vocational education in Poland needs to be preceded by an analysis of its current situation, with special stress put on both strong and weak points as well as opportunities and threats. This can be done through a SWOT analysis. Interviews conducted by the authors with teachers, heads of vocational schools and employers, as well as other research (Tajer, 2010) and specialist literature (Osiecka-Chojnacka, 2007) indicate the following strong features of VET in Poland:

- Graduation means getting qualifications and enables starting a job without the need for further education;
- With vocational education (i.e. the so-called trade in the hand) it is easier to plan further education (particularly after technical vocational school which ends with the *Matura* and a career);
- Pupils combine learning and a career, as in the course of learning they get experience at work, which can be essential for a future employer;
- Schools teach effective teamwork and entrepreneurship relatively well, and equip pupils quite well with basic theoretical knowledge in subjects such as mathematics, physics or chemistry, although the fact mentioned earlier that weaker pupils get to these schools poses a certain barrier;
- Growing, although still insufficient, cooperation between schools and entrepreneurs in recent years has helped with finding a job;
- Although this is still not very common, cooperation with international corporations which have branches in Poland means pupils can more and more often get work experience and apprenticeships abroad and thus experience the world and international labour market.

The socio-economic and technological transformation which takes place in the modern world as well the development of a knowledge-based economy does not lead to a marginalisation of VET. On the contrary, it means creating a new role for the vocational school. It should be underlined, however, that the modern system of

vocational education and training brings, according to Berger and Pilz (2009), not only a variety of individual benefits for participants of VET; there are also benefits for companies, as well as benefits in terms of economic, social and public development. However, to take up such a new role and prepare schools for contemporary educational challenges, one should be aware of the following weak points of vocational education in Poland (cf. Tajer, 2010; Osiecka-Chojnacka, 2010):

- The education on offer generally does not correspond to the requirements of the labour market;
- There is a lack of schools offering education for the most desirable professions in the labour market are missing (e.g. computer specialists, electronics, mechanics, construction technicians);
- Education in the trades offered by schools is more theoretical than practical; this is a consequence of loosening relationships with companies in the period of transformation as well as underinvestment of schools in modern machinery and tools for practical apprenticeship (generally a weak technical and teaching base);
- Teachers are generally well-educated theoreticians, but many have a low knowledge of new technologies; this problem can be solved through a more intensive involvement of companies in the educational process; the problem of limited practical experience of teachers is also typical of other OECD countries (OECD, 2010, pp. 92 et seq.);
- The lack of a modern technical and teaching base in schools means a rapid change to the educational profile is impossible; as a result adaptation to labour market needs is delayed;
- Classification of school trades does not correspond with the classification of trades existing in the economy; this is to be changed soon as a result of the creation of a National Qualifications Framework following the recommendation of the European Parliament and Council of 23 April 2008 on establishing the European Qualifications Framework for lifelong learning (EQF); 'school' trades will be divided into vocational qualifications on the basis of so-called economic classification, i.e. classification of the trades and specialties concordant with the needs of the labour market. Establishing equivalence between qualifications is at the top of the European Union's agenda and forms part of the Lisbon Strategy aimed at enhancing European competitiveness and creating 'more and better jobs' (Brockmann et al., 2008, p. 227 et seq.).
- The core curriculum for VET is prepared by the Ministry of National Education without broad consultation with the representatives of the economic practice,

so greater involvement of entrepreneurs is necessary in creating both core and school curricula;

- Problems in the educational and vocational mobility of pupils and VET graduates due to large differences in school curricula; introducing modular education is supposed to counteract this situation, as certain blocks of subjects will be identical in all sorts of schools and specialties;
- A system of careers guidance should be an important instrument in propagating vocational schools. Presently information about educational opportunities and the labour market situation is not getting through to gymnasium pupils. Weak careers guidance stems from the inadequate preparation of the personnel involved, often not being properly trained for supporting students with personal problems. This issue was also addressed in the OECD Report (OECD, 2010, pp. 78 et seq.);
- During economic transformation a negative opinion of vocational education was formed in society, and thus many gymnasium graduates do not consider choosing this path of education; according to Gerlach (2004) this is also the consequence of the lower status of teachers working at vocational schools;
- Vocational schools are characterised by a low level of foreign-language teaching (particularly English), while employers expect graduates to know at least one foreign language, and in many trades associated with modern technologies this is English.

EU funds are a great opportunity for schools (cf. Zygierewicz, 2009) to improve their educational offering. Such funds are more and more frequently used for modernisation of the school's assets, such as the machines and tools used for apprenticeships as well as other teaching equipment.

Leonardo da Vinci is the EU programme directed towards the development of VET. It gives support to various actions associated with this type of education, some at the level of individual states, and some at the EU level. In the first period of its implementation in Poland a sequence of the positive effects of *Leonardo da Vinci* was observed (Zygierewicz, 2009).

Schools can apply for the resources of the European Regional Development Fund (ERDF), which co-finances educational investment projects, including those aimed at raising the quality and attractiveness of VET. In Poland ERDF is implemented through a series of operating programmes:

- 16 Regional Operating Programmes, implemented by the self-government bodies of individual *voivodeships* (provinces);

- The 'Infrastructure and Environment' Operating Programme, also co-financed from the EU Social Fund;
- The 'Innovative Economy' Operating Programme;
- The 'Development of Eastern Poland' Operating Programme.

As part of the investment, the infrastructure of educational bases is being modernised, including institutions of VET. It is assumed that such projects will be developed within all sixteen Regional Operating Programmes on a similar scale. As part of these projects new schools can be built or existing ones modernised. Moreover, the majority of Regional Operating Programmes enable schools to purchase equipment, including VET equipment. In addition, the resources from the European Social Fund – 'Human Capital' Operating Programme for the years 2007–2013 can be used for educating and training VET teachers. The support directed towards vocational schools is available as part of 9.2 action 'Increasing the quality and attraction of vocational education.' The objective of the 9.2 action is improving the attractiveness and raising the quality of the education offered by VET schools and educational institutions in order to raise pupils' employability. Additionally, Poland's expected economic boom will create opportunities for the development of VET, as this would increase the demand for specialists in many occupations within the labour market.

The two largest barriers to transforming vocational education are not only the lack of financial resources for modernisation (on the local, regional and central level), but also the lack of a clear concept for the reform of VET. This situation changed in 2010, when the Ministry of National Education started intensive work on such a concept. Its first outcome is a cohesive publication entitled 'Vocational and lifelong learning. The assumptions of planned changes. A guideline'. From the perspective of the government, cooperation between the ministries of education, economy, labour and regional development is essential for creating and implementing such a reform programme. This is due to the fact that the issue of vocational education and training is so extensive. This reform cannot be prepared solely by the Department of Education without the cooperation of the economic environment and the involvement of entrepreneurs (e.g. from the associations of employers) and trade unions. It also means there is a need to settle the matter of closures of specialised secondary schools, the development of an efficient system of careers guidance, as well as undertaking promotional action in favour of VET. Additionally, continuous work on improving school curricula and teacher training as well as a change to the negative image of VET is necessary in society.

However, demographic changes pose a barrier, as a period of population decline is at present afflicting secondary schools, leading to school closures; on the other hand, such demographic regression can be an opportunity to reduce the number of pupils per class. It requires, however, that additional financial resources be found in the state budget and self-government units, which is not a simple task during the recovery period from an economic crisis.

Conclusions

To sum up, the position of vocational education and training in Poland is not satisfactory. This is due to the 1999 reform favouring general secondary education as well as the lack of a concept of changes in VET, lack of financial support for schools, and lack of cooperation between schools and enterprises.

Thus, it is necessary to take action in order to counteract the weak points described above, as well as to improve the quality of VET by increasing the number of lessons devoted to workplace learning, where students can learn about the day-to-day reality of an occupation; the significant role of workplace learning was underlined in Chapter 5 of the OECD Report (OECD, 2010) and improving or creating school curricula for individual occupations, adapted for the new classification of trades in accordance with the EQF. In addition, it is crucial to implement new, innovative forms of teaching and assessment characterised by greater effectiveness than the traditional ones as well as enhancing the education process in ways including basing its aims in terms of how things look in practice, using modern teaching centres (including multimedia materials), and implementing elements of distance learning (cf. Kwiatkowski, 2008).

It seems that improving teacher training for vocational education and adapting the base and teaching equipment of schools to meet the standards of the economic reality is essential to raising the quality of VET. Broader inclusion of practitioners of economic life in creating school curricula and classes, according to Zahorska and Walczak (2005), is crucial to expanding the system of incentives for employers who undertake cooperation with schools and organise vocational training at an appropriate level (p. 8). This could be achieved through the development of existing centres for practical education, which could cooperate with schools as part of vocational education and become centres of vocational lifelong learning, preparing for work in all sorts of professions, in different non-school forms.

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Best for the Bright? The Pros and Cons of the New Danish Apprenticeship Model

Vibe Aarkrog

Introduction

Within the last 15–20 years apprenticeship has had a revival, supported by theories about learning in practice (Schön, 1983) in particular situated learning (Lave and Wenger, 1991). These theories have contributed to developing the concept of learning to include formal and informal learning and to introducing general shift of focus from teaching to learning. Apprenticeship is in many ways perceived as an optimal way of learning, as it is closely connected to a specific and concrete practice and involves the luxury of individual training. However studies of and literature about apprenticeship training all point to the necessity of further developing apprenticeship in order to enable the general and expansive learning that corresponds to the modern demands for qualifications (Fuller and Unwin, 1998; Gamble, 2002; Guile and Young, 1998; Shaw and McAndrew, 2008). That part of the training, which aims at transcending the specific community of practice, often takes place in school-based education, (Brooker and Butler, 1997). In the Danish dual system the general training will typically take place in VET colleges.

However, in this article about the new apprenticeship model in Denmark, the issue is whether the general parts of the VET curricula can be accomplished in other ways than through school-based learning. This issue is relevant because the new apprenticeship model partly substitutes school-based training with in-company-based training.

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In 2006 the new Danish apprenticeship model¹ was launched as a third entrance into VET. The Danish VET programmes which last for 1,5–5 years, begin with a basic course typically of school-based education, lasting 20 weeks². Having completed the basic course the students apply for in-company based training, and they enrol in the main course in which they alternate between school-based and in-company-based training.

Alongside the school-based entrance to the programmes it is also possible for the students to choose a practical entrance if they obtain a contract with a company, before they enrol in the basic course. Choosing the practical entrance, the students alternate between in-company-based training and school-based education right from the beginning of the programme. The students obtain the same qualifications no matter whether they choose the school-based or practice-based entrances.

The new apprenticeship model provides a third and equal way to obtaining a VET qualification in which the students – as in the practice-based entrance – sign an apprenticeship contract with a company at the very beginning of the programme. One may argue that there is no reason to label this apprenticeship model a *new* model, as apprenticeship learning is already a well-established part of Danish vocational training, in fact dating back to the fifth teen century (Sigurjonsson, 2002). However the difference between the traditional apprenticeship and the new model is that in the traditional apprenticeship the whole qualification was obtained through the apprenticeship. The new apprenticeship is defined as a practical entrance into VET (see Fig. 1).

The new model draws on the traditional Danish apprenticeship model in the sense that the training takes place in a company where a master or an experienced colleague trains the apprentice. The term ‘new’ indicates that the VET system has included a new entrance into Danish VET. The apprenticeship entrance differs from the two other entrances by including no or very little school-based education, the purpose being to meet the non-academically minded students who prefer to learn through practical tasks.

However, studies of the effects of the new apprenticeship model show that the purpose of this model has not been reached completely: the model has only partly reached its target group: young people who prefer to learn through solving practical task. Although this is a simplification of the students’ skills and abilities, in the article these young people are labelled ‘practical minded students’, in order to distin-

¹ Even though the apprenticeship model is not that new anymore we still label it ‘new apprenticeship’, which is then also the term used in this article.

² In the commercial programmes the basic course lasts 1–2 years.

School-based entrance

Basic course School-based education	Main course: in-company-based training alternating with school-based education and training
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Practical entrance

In-company-based training (often 3-6 months)	Basic course: school-based education (often 20 weeks)	Main course: in-company-based training alternating with school-based education and training
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New apprenticeship model

In-company-based training 1 year including some theoretical training Possibly supplied by school-based education	Main course: in-company-based training (typically in the company where the apprenticeship training has taken place) alternating with school-based education and training, possibly including school-based courses from the basic course
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Figure 1 Danish VET Programmes

gush them from the young people who prefer to learn through books: academically minded students.

Although training in apprenticeship may strongly influence the young peoples' motivation for learning, the important question is whether apprenticeship training can at all match the nowadays needs for skilled qualifications.

Arguments for the New Apprenticeship Model

The development of the new apprenticeship model is part of reaching the overarching target within Danish youth education that by 2015, 95 percentage of a cohort should complete a youth education programme. The 95 completion target concerns the two main routes in Danish youth education: the general youth education programmes (gymnasium) that qualify for further education and vocational education programmes that qualify for skilled jobs. There are all together 107 initial vocational programmes including agricultural, commercial, social- and health care and technical programmes.

The 95 completion target poses severe challenges to the VET-programmes as the students' qualifications are extremely diverse. While some students are well quali-

fied for accomplishing a vocationally programme VET also includes a considerable proportion of weak students.

The students can be weak in several respects including *skills* and *competences*, clear *professional and educational ambitions* or *social network*:

Many of the VET-students have reading and arithmetic deficits or have in general suffered defeats within book learning during primary and lower secondary education. Research shows that young people at the age of 16 leaving compulsory education have often not made up their minds about their future professions. This is a problem within VET where the students will have to decide whether they should train as carpenters or bakers in order to enrol in the right programme. Instead the students will choose programmes that are so general that the students will have more time for making their professional and consequently educational decision (Pedersen, 2009). The students' family background, living conditions etc. are in many cases unstable, and the young people need contact with 'significant' adults, i.e. adults who are significant for the individual student's educational and social progress (Pedersen, 2006).

Legislation of Danish VET has in various ways tried more or less successfully to meet the heterogeneous group of students. The current legislation of VET should be viewed in the light of the previous reform from 2000. This reform was much criticized concerning particularly two characteristics. The one was the emphasis on individualisation in the sense of 'self-directed learning' (Brookfield, 1986), manifested in a modularised structure and in the students' responsibility for their own learning process. The other characteristic was establishing seven broad entrances with a rather strong focus on general subjects, the intension of which was to provide the students with an opportunity for making their choice of career.

However, both characteristics did not agree with the practically minded and often also socially weak students. Research showed that the Reform 2000 was too great a challenge for these students, who were not able to design and take responsibility for their own learning process, who needed to belong to a permanent peer group, and who were not motivated for learning general subjects (Aarkrog, 2004, 2008; Koudahl, 2006). The students dropped out, and as a consequence the pedagogy and the structure of VET was gradually modified and differentiated in order to counteract the high dropout rate. Although sticking to the broad entrances practical training the first part of the programmes was increased and some of the general subjects moved to the latter parts of the programmes.

The new apprenticeship model is the most radical manifest of practice-based training when viewed in the light of the usual structure of the VET-programmes.

The Danish VET-programmes

Although apprenticeship has traditionally been combined with various forms of school-based education, the Danish dual system in its present form was not introduced until 1956. In the dual system the students alternate between school-based theoretical and practical training and in-company based practical training.

The dual system has gradually substituted the traditional apprenticeship system and perhaps as a consequence of this we do not use the term 'apprenticeship' about the in-company based training in the dual system, which is instead called practical training or practical education. In that way the Danish meaning of the concept 'apprenticeship' differs from the understanding of apprenticeship training as dual training, in which school-based education combines with in-company-based training (Brooker and Butler, 1997; Fuller, 1996).

The new apprenticeship model takes up the first year of the VET-programme, after which the students (apprentices) complete the rest of the programme, including the journey man test, together with the students, who have chosen either the school-based or practice-based entrances. The salary and employment follow the rules of the collective bargaining. Only VET programmes that are mainly suited for practical training can adopt the new apprenticeship model.

As the new apprenticeship only substitutes the first year of the programmes, it is not an alternative to the dual system. Rather it combines with the dual system in the main course of the programmes.

One of the main characteristics of the new Danish apprenticeship model is that it mainly includes practical training.

The objective of the new apprenticeship model is to provide an opportunity for those young people who according to the government programme 'New targets' from 2005. '*... may have a specific need for being attached to a workplace from the beginning of the programmes in order to gain a solid foothold in the labour market*' (The Danish Ministry of Education, 2005, p. 8). Apart from reaching the practically minded young people, the purpose of the apprenticeship model is to increase the number of ethnical minority students who complete a VET-programme.³ From a pedagogical point of view the practical entrance may motivate these young people not only for practical training, but gradually also for theoretical training. This is evident in the structure of the apprenticeship model, as the students should be able to follow the ordinary route after the first year.

³ Quite interesting to suggest an apprenticeship model to these students who have proved to have particular difficulties in obtaining an apprenticeship, please see paragraph about who enrol in new apprenticeships.

The new apprenticeship not only combines with the dual structure, it may also incorporate the dual structure, although the theoretical training can take place in the company, as mentioned above: *'Part of the apprenticeship is planned to take place in a VET college... However companies, which can provide the necessary courses, are also approved to accomplish the theoretical parts of the programmes...'* (The Danish Ministry of Education, 2005, p. 8). In that way the new apprenticeship entrance should mainly include informal learning, a concept which others have also used to characterize apprenticeship training (Fuller and Unwin, 1998).

Of particular importance here is: *'The new apprentice obtains the same qualification as a student who accomplishes the qualification in the traditional dual system'* (The Danish Ministry of Education, 2005, p. 22). The intention is that the students obtain the same qualifications through in-company-based training in an informal learning context as the students in the school-based and formal learning context.

Thus the new apprenticeship is not a return to the traditional apprenticeship; it is an alternative track within the dual system, based on results from research stating that the practically minded young people need a change after 9–10 years in primary and lower secondary education which mainly includes theoretical training. Furthermore the assumption is that if the young people succeed in practical training they might be encouraged to resume theoretical training.

Summing up, it is important to understand the new apprenticeship model in the light of a well established dual system. For even in the dual system – despite the alternation between practical and theoretical training – the school-based education can still discourage the students who after compulsory school had expected to enrol in a practical learning environment. In the new apprenticeship model practical training has been placed up front.

Cooperation Between Company and College

One may argue – and with good reason – that the new apprenticeship model does not differ from the practice-based entrance mentioned above. However, the apprenticeship model includes a number of characteristics that distinguish it as a third entrance, in particular an intensified cooperation between company and VET college:

The apprentice is supervised by a so called contact teacher from the VET college throughout the apprenticeship training. Among other things the contact teacher visits the apprentice in the company. The advantage of this is that the apprentice has a permanent contact with the same adult throughout the apprenticeship. As

many of the VET students are characterized by an unstable family background, the contact teacher not only assists the apprentice's learning process; together with the master the contact teacher represents one of the 'significant' adults, cf. above.

The social aspect of apprenticeship training (Guile and Young, 1998; Lave and Wenger, 1991) is thus taken a step further to include also the community of practice of the VET college. In comparison, in the practice-based entrance each student is also assigned a contact teacher at the VET college, but the contact teacher is not obliged to establish close contact with the company.

The advantage of the close cooperation is that the new apprenticeship provides an opportunity for the apprentice for a stable contact not only with colleagues in company, but also with an adult who represents the future setting for learning: the VET college. The contact between the apprentice and the contact teacher can thus possibly facilitate the apprentice's transition into college and increase the apprentice's opportunities for social contact.

Together the contact teacher and the master draw up an educational plan for the apprentice, which includes estimating the apprentice's progress. If the company has not been approved to train for the whole qualification the contact teacher and the master decide how to supply the practical training with school-based education. They also draft up the practical task that finalises the apprenticeship training, and which is part of the evaluation of the apprentices' qualifications at the termination of the apprenticeship. By establishing these concrete tasks and activities the apprenticeship model contributes to strengthen the cooperation between college and company, which has also been recommended in other studies of apprenticeship training (Fuller, 1996).

In conclusion the new apprenticeship model provides a number of assets compared to the traditional apprenticeship as well as to the two other entrances into VET; the school-based and the practical entrances:

In the apprenticeship model the student is trained mainly through participating in practice and solving practical tasks. The general and theoretical parts of the programmes are reduced as much as possible. The apprentice is typically being trained by the master, perhaps supplied by one or more journeymen or colleagues. Through co-worker training the apprentice learns through observing and imitating experienced colleagues and receives an immediate feedback on the way he or she solves the task (Kvale, 2004; Lave and Wenger, 1991).

By committing the VET college and the company to cooperate and to obtain concrete results, the new apprenticeship model seeks to secure that the apprenticeship entrance complies with the objectives of current VET curricula, i.e. a training which includes the development of core skills, and the ability for reflecting on practice. This further develops the traditional apprenticeship training that has been described

by Lave and Wenger, in which the apprentice learns through participation in the specific community of practice by observing and imitating 'the old timers' (Lave and Wenger, 1991). The modern apprenticeship model thus reflects the general modernising of apprenticeship and training in workplaces, where the apprentices do not only learn *in* practice but also *about* practice. This training includes conceptualizing performance in practice, reflection on practice and expansive learning (Billett, 2003; Fuller and Unwin, 1998).

So alongside postponing the school-based education – or at least most of it – for a year, the cooperation between company and the college secures that the apprentices reach the objectives that are equal to those obtained in the school-based and practice-based entrances.

Studies of Danish VET show that many of the students prefer solving practical tasks in a workplace to school-based theoretical training. The students have often difficulties in perceiving the coherence of the school-based and company-based parts of programmes. Many of the students long for experiencing success within the educational system. And the students often lack solid adult support. The new apprenticeship model was expected to meet these needs.

Who Enrols in the New Apprenticeship Model and What Do They Learn?

Descriptions of the youngsters and young adults who have enrolled in apprenticeships confirm the need for the apprenticeship model. A study shows that the apprentices have developed self-confidence and motivation for learning through the apprenticeship model (Jakobsen, 2008), corresponding to results of international studies which also point to the motivational advantages of apprenticeship (Brockmann, 2010).

In 2009 and 2010 two Danish research projects have looked into a number of characteristics of the new apprenticeship model including on the one hand characteristics of those enrolling in apprenticeships and on the other hand the apprentices' experiences with apprenticeship training and their learning outcome.

The aim of the 2009 study is to compare the demography and the learning outcome of the students who have begun their training in the apprenticeship entrance respectively the school-based entrance. The study includes those nine VET-programmes which – in comparison with the total number of students in each of the programmes – have had the largest intake of new apprenticeship contracts in the period August 2006-October 2008 (Juul, 2009). The percentage of

students who choose the new apprenticeship model varies from programme to programme. Thus within the programme for bakers the new apprenticeship model constitutes 27 percentage of all practical training contracts. Ranks second is the programme for hairdressers and third the programme for retail butchers.

Concerning the students' qualifications, age, sex or ethnicity there are no significant differences between the students who have chosen the new apprenticeship entrance respectively the school-based entrance (*ibid.*, pp. 28 et seqq.). Thus one of the purposes of the new apprenticeship model does not seem to have been completely fulfilled, namely that this model should increase the intake of the practically minded students and the ethnic minorities (The Danish Ministry of Education, 2005). Generally the characteristics of the students' qualifications and backgrounds are very much the same in the two types of entrances: the school-based entrance and the new apprenticeship model.⁴

Interestingly the study shows that the students are more in favour of school-based education than other studies of the Danish VET-students indicate. Although many of the VET students experience success within practical work compared to former experiences in book learning they are also conscious about the advantages of school-based education. Thus the students express that school-based education includes more general knowledge of the vocation than merely practical training and that qualifications for skilled jobs cannot be obtained solely through practical training. It is important for the students not only to be able to accomplish the practical tasks but also to understand why they should be accomplished in a certain way, as this strengthens the students' sense of professionalism (*ibid.*, p. 101). The students are thus in line of with the current perception of quality in apprenticeship training that was mentioned above.

As is highlighted in the study, the students' positive attitude towards school-based education should also be seen in the light that in the technical VET programmes a relatively large part of the school-based training takes place in workshops which means that the students to a great extent learn through solving practical tasks. Furthermore it is important to keep in mind that the interviewed students have accomplished the basic course and belong to the group of proficient students cf. note 4.

⁴ In the study it is emphasized that the empirical data compare those students within the school-based entrance who have obtained a practical training contract with the students in the new apprenticeship model (Juil, 2009). As the students in the study have been asked after they have completed basic course, they do not represent the cohort that enrol in basic course. The implication of this is that a comparison of the students at the time of entering the basic course with the new apprenticeship students might have shown that the latter are better off concerning both qualifications and background variables.

Contrary to the intention of the new apprenticeship model, cf. above, the study shows that the students in the school-based entrance respectively the new apprenticeship entrance develop somewhat different competences during their first year of training⁵. The students in the school-based entrance are better theoretically equipped for the main course, whereas the apprentices have developed more routine as concerns the practical skills (*ibid.*, p. 102). In other words the pedagogical methods that characterize training in school-based education, respectively in apprenticeships somewhat influence the learning outcome. This means that the new apprenticeship entrance cannot completely substitute the school-based entrance as concerns the students' learning outcome. The learning outcome obtained in the apprenticeship entrance need not be better or worse than the learning outcome of the school-based entrance. It is just not the same.

As was mentioned above, one of the characteristics of the group of 'weak students' is that they need time for deciding career and education. The study points to one of the advantages of school-based education: it provides time for this decision making (*ibid.*, p. 100). School-based education provides a protective environment which – through general education – can help the students to clarify their choice of profession and career. In comparison the apprenticeship route into VET imply that the young people decide future profession.

The other empirical study from 2010 (Insight, 2010) focuses on the new apprenticeship model in the commercial VET programmes. The study concludes that the new apprenticeship model is 'a good complement, but no panacea' (*ibid.*, p. 37). The study shows that the new apprenticeship entrance has not had a positive influence on the drop-out rate, most probably because the groups of students who choose the apprenticeship model are also typically most at risk of dropping out (*ibid.*, p. 36).

The study shows that in the commercial programmes the practically minded and academically weak students, males and the ethnic minorities are relatively overrepresented in the new apprenticeship model compared to the two other entrances. This might indicate that the apprenticeship model to a greater extent fulfil the goal of reaching precisely these groups of students in the commercial VET programmes than in the technical programmes. A probable explanation is that the apprenticeship entrance is more clearly distinguishable from the school-based entrance in the commercial programme than in the technical programmes, the school-based entrances in the commercial programmes being significantly longer, including much more theoretical training and no training in workshops.

⁵ Again it is difficult precisely to conclude on the significance of the differences because the students in the school-based entrance in this study are generally ahead of the curve.

A significant result is that the apprenticeship entrance – by providing first hands experiences of practice within a profession – can help the students deciding their future profession. Practically minded students might learn more about the profession by experiencing the profession than by talking to a guidance counsellor. The problem is that the students have already chosen the profession by signing the apprenticeship contract. The result thus points to a need for flexible pathways from the apprenticeship entrance for those students who find out that they have not made the right choice.

The study shows that apprenticeship is to a great extent based on personal relationships. The personal relationship is both an advantage and a disadvantage. On the one hand the apprenticeship model provides a close and safe relationship between apprentice and master. On the other hand the apprentice depends on one – perhaps two persons – and is therefore vulnerable to changes. In the school-based entrance the individual student belongs in a class, which provides other kinds of and in particular safer social affiliations (Insight, 2010). As was mentioned above the contact teacher plays an important role, as he or she adds to the apprentice's social network and paves the later transition to the VET college.

Based on the two studies it can be concluded that the new apprenticeship entrance meets the needs for some of the students in VET particularly by motivating and encouraging the practically minded and academically students for learning. However the studies also highlight a number of problems or challenges in the new apprenticeship model:

- The apprenticeship entrance does not convincingly reach the target group: the academically weak students.
- It does not improve the drop-out rate.
- It does not lead to the same learning outcome as the school-based entrance. The apprenticeship training to a larger degree than the school-based education develops the students' practical skills whereas the school-based training develops the students' general knowledge and skills. The students might end up obtaining the same qualifications. However after the first year the students in the apprenticeship entrance are expected to sit in the same classes as the students from the school-based entrance.
- It can be a socially vulnerable institution.

Based on the results of the studies the following is an elaboration of some of the central issues that should be discussed in relation to the new apprenticeship model in particular and in relation to modern apprenticeship in general.

The Learning Outcome Discourse

Concerning learning outcome the results of the studies above show that the training methods influence the students' outcome. One does not necessarily reach the same learning outcome when choosing an alternative training method (Aarkrog, 2008). Rather the method influences the students' outcome because it influences the *content* of the training or course. The apprenticeship model is meant to be a third way leading to the same competences as the school-based and practice-based entrances. However, the studies show that the apprentices do not develop the same competences as the students in the other entrances. So when the apprentices join the other students after the first year of training, the apprentices' qualifications differ from those of the other students. In other words it needs to be investigated, whether the students from the three entrances are in fact qualified to join the same classes in the main course of the programmes, as was originally the ambition, cf. above.

The equivalence of training in school and training in practice is one of the central elements in the learning outcome discourse, where the focus is on the persons' ability to perform, on their qualifications and not on how these qualifications have been obtained. When focusing on the learning outcome it does not matter whether the person has learned through solving practical tasks or through reading books, how long it has taken to obtain the qualification and so on. The output discourse permeates much of the EU education policy, e.g. the development of the European and national qualification frames and the credit transfer systems, e.g. ECVET.

One of the deficits of the outcome discourse is that it ignores the importance of the training process, of the teacher's or the trainer's course planning and pedagogical reflections (Brooker and Butler, 1997). Learning in the workplace is informal; the main purpose is production, not training. The way that Lave and Wenger define the learning process as participation in the community of practice reflects that the overall aim in the companies and enterprises is to produce. And the advantage of learning in the workplace is exactly that it should be subordinate to production. The master, the journeymen or colleagues train the apprentice in connection with accomplishing tasks and situations in the community of practice. They are not trained as qualified teachers. They might have had some pedagogical training as trainers; however their pedagogical strength is that they represent practice in the particular community and the particular trade. Informal learning in the workplace may not benefit the weak students, because they need the trainer, the teacher or the supervisor who knows how to differentiate the training process to the particular participants. One could argue that trainers in companies should have pedagogical competences; however it is also important to maintain the particular strengths of learning in workplaces which includes that they are not schools.

While providing practical training close to the production, the new apprenticeship model may all the same not be the solution for the socially weak students, as they will not necessarily possess the degree of self-management that is a condition for benefitting from informal learning and in general from an outcome-based framework (Cort, 2010). Compared to formal learning informal learning put more responsibility on the individual learner, and exactly the academically and socially weak students are often not endowed with this gift.

The learning outcome discourse may lead us to believe that it does not matter how and where you acquire knowledge and skills. However the studies of the new apprenticeship model point to the importance of also focusing on the input and ask for a critical examination of the outcome discourse.

Correspondence with the Current Needs for Skilled Labour Qualifications

The strength but also the weakness of training in apprenticeship is that training is embedded in a specific practice. Those students/apprentices who are concrete thinkers can concentrate on obtaining the specific skills that are needed in the particular community of practice. Through observing and imitating the old timers the apprentices gradually learn to accomplish the tasks and speak the language that characterize the particular community of practice cf. (Lave and Wenger, 1991). In that respect the apprenticeship model can appeal to the practically minded students.

However the students should also be able to adapt their skills and knowledge to new situations and tasks. The ability for transfer is a core competence in modern VET qualifications, when perceived as the ability for adapting to the rapid changing development in the labour market. Transfer necessitates that the person is able to talk about and reflect on the current community of practice and the tasks and skills inherent in that particular community. The traditional apprenticeship training neither includes developing a vocabulary about practice nor the ability to reflect on practice. Studies of apprenticeship show that the masters are not necessarily pedagogues, their interest in training can be quite limited and the apprentices lack opportunities for learning. The apprentices need a skilled teacher in order to develop their skills as it has been argued in an Australian study of commercial cookery: it does not suffice that the master or trainer is a role model for the apprentices. The trainer should also be able to structure the practical experiences and provide explanations in order that the apprentices develop problem solving skills (Cornford, 1998, p. 560).

To correspond to these current demands for skilled labour the training is too narrow when closely tied up with the practical performance in the specific company. The horizontally thinking apprentices will not be able to – and in general neither will their masters – to extract the general principles from the specific task (Gamble, 2004). Former studies have shown that abstract thinking is an essential ability in extracting the general from the particular. In order to perceive the particular community of practice as just *one example* of a number of communities of practice with a number of particular tasks sharing the same principles, the students must be able to perceive the structural elements and to abstract these from the salient features of the particular community, i.e. the surface elements (Holyoak and Koh, 1987).

In fact, the students or apprentices who will be able to retrieve the general principles from the particular cases are not the students that were planned to be the main target group of the new apprenticeship model. So with the aim of developing the relevant qualifications i.e. qualifications that accord with the demands on the current labour market, it could be argued that the new apprenticeship model is best suited for the academically bright students.

On the other hand the apprenticeship entrance may motivate exactly those students who would have dropped out in the school-based entrance, so from a motivational point of view the apprenticeship entrance may play an important role to reach the 95 completion target if it succeeds in recruiting the right students.

Students, who have chosen the school-based entrance, move from the general school-based education to the specific training connected to the specific company where they accomplish their practical training. In comparison the students in the apprenticeship entrance begin with the specific training closely related to the company and they will therefore need general education and training in the latter part of the programme. So it is questionable whether the two groups of students can be expected to meet in the same classes in the main course.

Reflecting on Practice

In order to match the current needs for skilled qualifications the students should be able to reflect on practice. An implication of this is that the quality of apprenticeship training depends on the master's or trainers' ability to train the apprentice not only to imitate the experienced colleagues but also to critically reflect on and question the particular way of solving tasks and problems. More generally the quality depends on the company's willingness to learn and develop. One might argue that it is not important to reflect during the first year of training as the students will have plenty

of time for doing that later on. However precisely the practical training provides a concrete scene for reflection.

In the dual system the school-based part of the programmes will to a large degree be expected to take care of developing the students' ability to reflect on practice. However in the new apprenticeship model the importance of learning through looking from the outside in on practice seems to have disappeared. The training includes the theoretical knowledge that is necessary for accomplishing the practical tasks, but not the apprentices' ability for reflecting on practice (The Danish Ministry of Education, 2005). The apprentices learn how to do, but not to reflect on why they perform and solve tasks in specific ways.

The focus on how to do corresponds very well with the focus on learning as a socialising process. The newcomers acquire knowledge and skills but they also become someone who belongs to the specific community of practice and talk and behave like the others in the community. In order to reflect critically, the apprentices will have to detach themselves from the community of practice. This includes the courage to socially disengage from the community, and the apprentices will need guidance and support in this process.

A way of modernising apprenticeships in order to strengthen the apprentices' ability to reflect on their practice is to organise the training in different settings, i.e. in different companies or in different departments of the same company. Traditionally the in-company-based training in the Danish VET programmes takes place in just one company. This ensures that the company will benefit from the training, as the apprentice will gradually move from being peripheral to performing as a full member of the community of practice. If the training takes place in several companies the apprentice's status as novice will last for at longer time; the apprentice will remain peripheral and therefore not so profitable for the company. This – at least to some extent – explains why training in several companies is not a widespread practice.

Training in several companies is however a means of developing the students' or apprentices' general competences. In the VET programme for rescue officers the students accomplish their practical training in two settings: in a rescue station where they learn to drive an ambulance and in a hospital where they learn to give premedical care. A study of this programme showed that training in two companies provided an excellent basis for reflecting on practice. By moving from one community of practice to another the students automatically compared the two communities (Aarkrog, 2006); the students learned by crossing borders (Wenger, 1998). Still the apprentices will need guidance in order to systematically compare and reflecting on the two communities of practice. The apprentices do not

automatically consciously compare and reflect just because they cross borders of communities of practice.

As it is not likely that the apprenticeship training will be shared by several companies, a way of strengthening reflection and general learning is through further developing the cooperation between the company and the VET college. The contact teacher can secure that the apprentice's zone of proximal development includes the general elements of the VET curriculum. The contact teacher can not only assist the apprentice but also the master or trainers in obtaining the necessary qualifications for reflecting on practice. In that way the learning process is situated in the company, however generalised and expanded by the extern person, the contact teacher.

Conclusion

The characteristics of apprenticeship training can be summed up in the following three dilemmas:

- Taking place in a specific practice and concentrating on developing routine in solving specific practical tasks apprenticeship training facilitates the learning process. However, in its traditional form it does not meet the current demands for skilled qualifications as this includes the ability of transferring general principles from one context to another. Therefore it is difficult to believe that students from the three different entrances will have the same needs for training in the main course as was originally the intention.
- While apprenticeship is a means of securing the apprentice a professional and social affiliation within a particular community of practice it can also prevent the apprentice from developing the ability for dissociating himself from and reflecting on practice.
- On the one hand an apprenticeship contract presupposes that the young person has clarified his choice of career. On the other hand apprenticeship training can be an important tool in career and educational guidance by providing first hand experiences of practice. This asks for developing flexible pathways in relation to the apprentice entrance.

The studies of the new apprenticeship entrance show that it provides a relevant alternative to the school-based entrance as it appeals to young people who prefer practical training to book learning, and who may gain self-confidence through accomplishing practical tasks and/ or through relating to and admiring an experienced colleague or master.

A central factor in optimizing learning in the workplace is the supervisor, who can help the learner to conceptualize the practical experiences (Billett, 2001; Rouiller and Goldstein, 1993).

Consequently, one of the ways to improve the new apprenticeship model is to strengthen the role of the contact teacher should be developed. As was mentioned above, the apprentice is being supervised by his master or trainer in the company as well as by his contact teacher from the college. This way of organising the apprenticeship makes it possible to respond to the challenges mentioned above.

The apprentice in the new apprenticeship model has a broader scope of contact than in traditional apprenticeships. The fact that the contact includes representatives from both company and college not only supports transfer of knowledge from company to college and vice versa. It also makes the apprentice less vulnerable to changes, as changes in the social constellations in one of the settings – either company or college – will most likely be somewhat amended by stability in the other setting.

The contact teacher can be perceived as the gate into and out of the specific community of practice in the company. The contact teacher should be able to generalise practice of that specific community of practice, i.e. deducing the relevant general principles included in the tasks and performances in the community.

The contact teacher should also be able to help the apprentice and the master to look at the community of practice from outside in, and to conceptualise and reflect on practice in the specific community.

As mentioned above, the main functions of the contact teacher is to draw up the educational plan for the apprentice together with the master, to draft the final test also in cooperation with the master and to follow the apprentice's development through visits in the company. A further development of the functions of the contact teacher can be a delicate matter, as reflecting on practice may provoke and offend the daily routines in the company. Furthermore it may include that the contact teacher will have in some ways to train the master, who may not have developed the necessary vocabulary to talk about and reflect on practice.

So a further development of the new apprenticeship model reflects the current issue of training in workplaces: the balance between on the one hand preserving the authenticity of the workplace, its task and culture and on the other hand securing that the workplace fulfil specific educational purposes.

Is the new apprenticeship model best for the bright students? The bright students will learn from any model. The new apprenticeship model is an important tool for motivating the non-academically and practically minded students. However in the further development of the model it is important not only to focus on its strong and convincing motivational effects but also on the apprentices' learning outcome.

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Pre-vocational Education in the Curriculum and Its Teaching Practice. A Study of Seven European Countries

Susanne Berger and Matthias Pilz

Introduction

This book presents the findings of a comparative research project on pre-vocational education in secondary schools in seven European countries. The framework was a multilateral project funded within the European Lifelong Learning Programme.¹ Against the backdrop of tensions across the EU, produced by the burgeoning use of technology, the growing importance of information and communications technologies, and globalisation, the aim of the three-year project *Fit for business – developing business competencies in school (Fifobi)* is to optimise pre-vocational and economic/business education and to encourage an entrepreneurial mindset among young European citizens (Berger and Pilz, 2010; Gonczol, 2010; Kurek and Rachwał, 2010).

Fifobi has therefore investigated the current situation with regard to both forms and content of pre-vocational education in state-funded schools in seven EU countries: Austria, Germany, Hungary, Latvia, Poland, Portugal and Scotland. This comparative study, which focuses on the last two years of general compulsory education

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(ISCED-level 2² (UNESCO, 1997)), is based on curriculum and interviews with teachers, employers' associations and trade unions. The study's main findings are presented here in an attempt to identify and compare the different European systems involved in designing the pre-vocational and economic/business education curriculum in secondary schools. On this basis, we then investigate potential strengths and weaknesses, both within each country and on a comparative basis. We conclude with a discussion of the main lessons to be learned.

Background and Rationale for the Research

In many European countries, young people's success in establishing their individual career paths depends on a successful entry into the labour market, once they have completed their compulsory education. In a number of countries, it has become increasingly difficult to make a direct transition from compulsory education into initial training and the labour market; both the high numbers of young people out of work and the correlation between unemployment rates and education/qualification levels (OECD, 2010) provide evidence for these difficulties.

With technology and automation becoming more important, and in an increasingly globalised world, observers predict that in the medium term, the demand from European labour markets for better qualifications – both academic and general – on the one hand and, on the other, the high importance now attached to completion of a course of training, make the issue of 'preparedness for training' more topical than it has ever been (European Commission, 2003). A 2005 survey by the German Chamber of Industry and Commerce meanwhile, reported complaints by many businesses that 'over recent years, the quality of applicants [had] declined markedly. This is not only reflected in their academic performance; their general demeanour, appropriate dress and expression, and in particular their willingness to work hard and their abil-

² The International Standard Classification of Education (ISCED) (UNESCO, 1997) level 2 includes lower secondary education, or the second stage of basic education. The principal characteristics of this level are defined as follows: 'The content of education at this stage is typically designed to complete the provision of basic education which began at ISCED level 1. In many, if not most, countries, the educational aim is to lay the foundation for lifelong learning and human development on which countries may systematically expand in further educational opportunities. The programmes at this level are usually on a more subject-oriented pattern using more specialised teachers and, more often, several teachers conducting classes in their field of specialisation. The full implementation of basic skills occurs at this level. The end of this level often coincides with the end of compulsory education where it exists.' (UNESCO, 1997, p. 18)

ity to make an accurate job application – unfortunately, none of that can be taken for granted any longer!’ (DIHK, 2005 cited in Bundesagentur für Arbeit, 2009, p. 2). As a result, (potential) employees have to cope with higher standards for the ideal combination of vocational and social competencies but they are also expected to fulfil expectations of a high degree of initiative and willingness to take responsibility. A well-founded pre-vocational education during their compulsory education could help to reduce the tensions in this precarious situation.

Pre-vocational education, with its emphasis on developing an entrepreneurial mindset, can have a substantial impact on the personality development of young people, with young people acquiring the skills to become a *citoyen*, a self-dependent and mature citizen in a dynamic civil society (Aff, 2005). Closer links between schools (both general and vocational) and business may also help to avoid early apprenticeship drop-outs (Niemeyer, 2005). Young people gain practical insights into the world of work that help them to deepen their awareness of their own strengths and weaknesses. Furthermore, there is a direct relationship between what has been learned and the benefits of practical experience, so workplace practice also helps to develop personal and social competencies (Oberth et al., 2006). *Fifobi* has, therefore, drawn on the findings relating to the current position of pre-vocational and economic/business education in European secondary schools with the overall aim of optimising pre-vocational and economic education, as well as promoting an entrepreneurial mindset among young Europeans. Its aim is also to encourage positive effects on the transition from compulsory education to the labour market and life-long learning.

Methodology

The study was designed to answer two specific research questions. In particular:

1. How is the pre-vocational education curriculum organised within different European countries and what does it imply?
2. Is there a difference between this *prescribed* curriculum and how it is actually taught (*enacted*) within the school?

The research, covering the period from 2009 to 2011, includes analysis of both quantitative and qualitative data. The first stage of data collection involved analysis of curricula for pre-vocational courses in all seven countries. A framework for this analysis was developed on the basis of the European Qualifications Framework

(EQF) (European Parliament and Council, 2008) and the traditional competence concept of Roth (1971), who has been influential in the field of education and pedagogy (Klieme and Hartig, 2007). Within this framework, four broad fields were used to categorise provision: knowledge based competencies in both business and economics, social competencies and self competencies.

Each field was then sub-divided into specific sub-competencies – 29 in all (see appendix 1). The sub-competencies in the field of knowledge based competencies in ‘economics’ and ‘business’ were based on a cluster of internationally-known scholarly texts, such as Appleby (1994) and Mankiw (2001). The ‘social’ and ‘self’ sub-competencies were adapted from the OECD definitions for key competencies (OECD, 2005). Researchers within each country then used this framework to analyse the relevant curriculum data.

The second stage of the research involved interviewing teachers from general schools within the compulsory education system in each country to establish how this *prescribed* curriculum was actually delivered. A semi-structured format was used for the interviews. Based on current pre-vocational education provision, size of school and level of qualification achieved (ICSCED-level 2), a purposive sample of schools was selected and a total of 75 teachers from across the seven countries were interviewed. The conceptual framework used for the study focuses on the potential differences between the *prescribed* curriculum (that is, the curriculum devised and published by national Ministries of Education) and the *enacted* curriculum (Bloomer, 1997; Edwards et al., 2009), a term that refers to how the curriculum is taught in practice in a classroom setting.

Curriculum Analysis

The quantitative analysis of the data was carried out by collecting and categorising subject headings within the curriculum documents used for pre-vocational education in all seven countries of the *Fifobi*-project, to ensure clusters like Geography, Civic Education or Social Science. Nevertheless, based on the results of the curriculum analysis, it was detected, that for all project countries, pre-vocational competencies in secondary education are, in varying degrees, promoted (cf. Fig. 1).

Throughout all countries, there is a tendency for the domination of topics regarding international trade and globalization (item E3) (cf. Fig. 2). Compared to all items in the field of knowledge based competencies in economics, this item prevails in Germany, Portugal and Hungary.

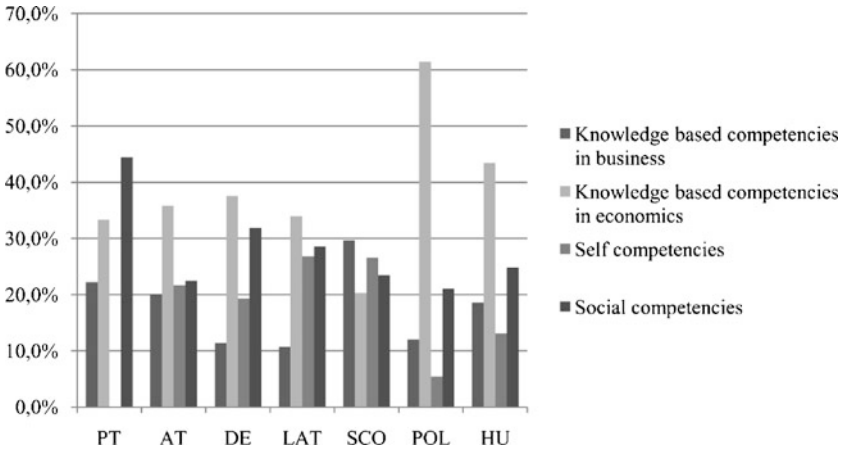


Figure 1 Comparison of knowledge based competencies in economics and business, social competencies and self competencies across all countries (normalised data) (Source: own illustration)

In Austria, Germany, Latvia, Poland and Hungary, there is generally a main focus on the basic principles of economics (item E1); especially in Hungary and Austria this item was coded in over 10% of the cases (cf. Fig. 2).

Compared to all other project countries, the Polish and Portuguese curricula are, with about 11%, strongly influenced by topics of the monetary system (item E5) (cf. Fig. 2). Topics regarding ‘government policies and their influences (item E6)’ as well as ‘labour market (item E11)’ are broadly represented in nearly every project countries (cf. Fig. 2). This might be attributed to the fact that in most analysed countries, pre-vocational education is usually integrated into other subjects, such as Civic Education or Geography.

Across all internationally tested curricula, knowledge about market forms (item E7) plays a relatively minor role. In particular, the curricula of Portugal, Poland, Germany and Austria do not have any codings in this topic (cf. Fig. 2).

Only in the field of knowledge based competencies in business does a relatively diverse picture emerge among the seven project countries. Contrary to the international trend, Scottish curricula are dominated by knowledge based competencies in business and industry (cf. Fig. 1).

In the curricula of Latvia, Hungary and Austria are, unlike the other four project countries, many references to topics regarding business and its external environ-

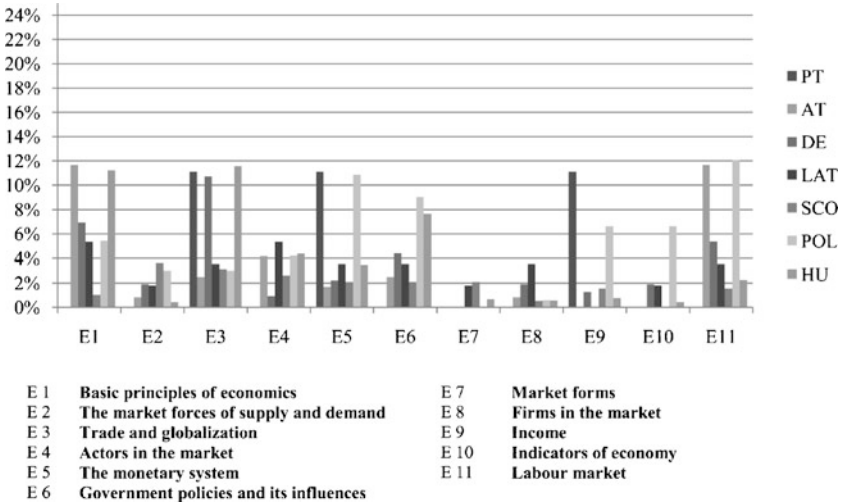


Figure 2 Detailed comparison of sub-competencies in knowledge based competencies in economic across all countries (normalised data) (Source: own illustration)

ment (item B1) (cf. Fig. 3). Furthermore the Hungarian curriculum tends to contain many references to knowledge in corporate strategy and planning (item B2).

In Portugal, only two items (B3 and B9) could be detected in the field of knowledge based competencies in business. Both topics (organizing and administrative management) are together covering 22% of the whole analysed curriculum.

In comparison to the other countries of the study, the Austrian pre-vocational curriculum focuses mainly on developing special knowledge in human resource management (B8), including topics like, training and development or redundancy and retirement.

Self competencies (with emphasis on entrepreneurial thinking and acting) across all project countries, with a share of 16%, have the lowest average priority compared to the other three areas (cf. Fig. 1).

Within this area, there is a relative balance of the sub-competencies: internal focus of control (SE1) (as defined in decision-making, self-control and organizational skills), achievement motivation (SE2) and eagerness for independence (SE3) identified in nearly all project countries (cf. Fig. 4).

The Polish pre-vocational education curriculum emphasizes within the area of self competencies 'achievement motivation' (SE2) only on one sub-competence. The more 'traditional' business attribute of moderate risk-taking (SE4), according to sci-

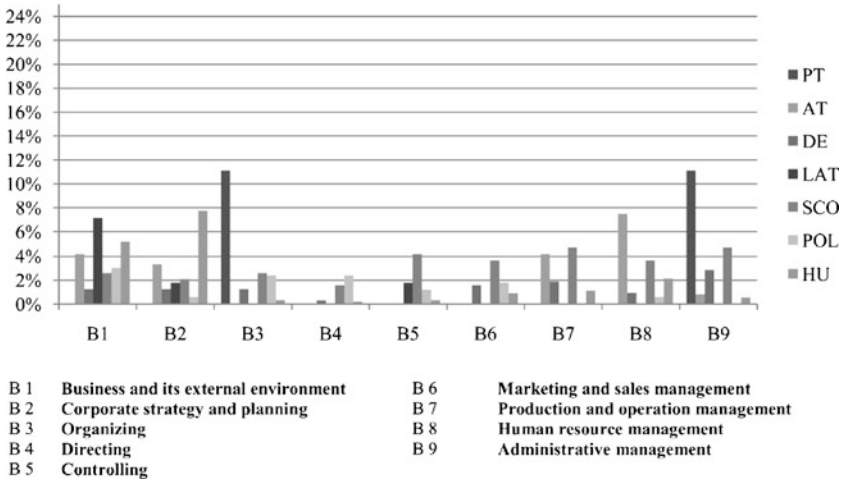


Figure 3 Detailed comparison of sub-competencies in knowledge based competencies in business across all countries (normalised data) (Source: own illustration)

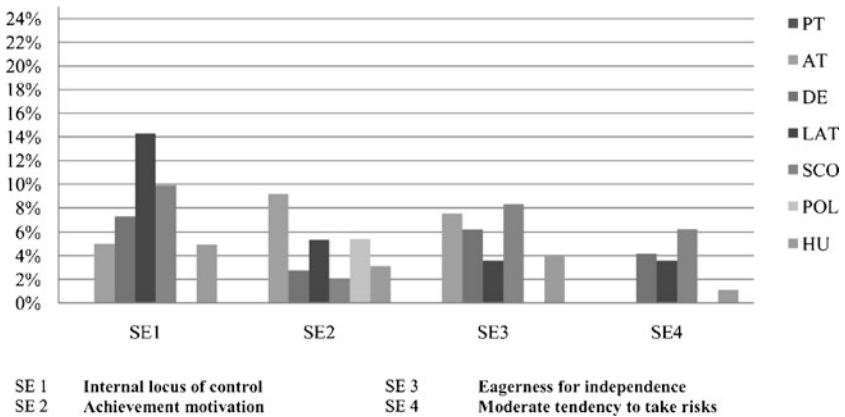


Figure 4 Detailed comparison of sub-competencies in the field of self competencies (with emphasis on entrepreneurial thinking) across all seven countries (normalised data) (Source: own illustration)

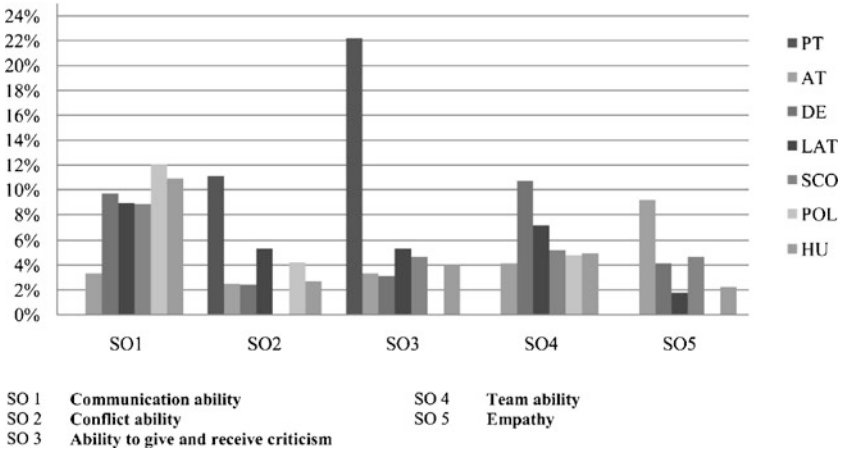


Figure 5 Detailed comparison of sub-competencies in the field of social competencies across all countries (normalised data) (Source: own illustration)

entific discussions (Eickelmann, 2006), features less across the analysed curricula of the seven countries (cf. Fig. 4).

In all internationally tested curricula, social competence is on average the second most coded competence (behind knowledge based competencies in economics) across the four competence fields (cf. Fig. 1). In six project countries this measured about one quarter (cf. Fig. 21.1). In Portugal however is almost half of the examined content assigned to this competence. Interestingly, it is particularly the sub-competency SO3 (ability to give and receive criticism) which covers about 22% of the whole analysed curricula.

A closer examination of the different sub-competencies shows, in addition to the promotion of communication skills (SO1), another focus on encouraging team spirit (SO4) among pupils (cf. Fig. 5). In particular, the curriculum in Germany occupies a pre-eminent position with more than twice as many nominations (on a normalised basis) as the other project countries in the item 'team ability' (cf. Fig. 5).

The promotion of empathy (SO5) is an underrepresented area in nearly every project country; except in Austria where 9% of the nominations of the coded responses can be counted for this item. It is however completely missing in the curricula of Poland (cf. Fig. 5).

Interview Data

The second stage of the research involved interviewing teachers from general schools within the compulsory education system in each country to establish how this prescribed curriculum was actually delivered. The interview data is employed here selectively and used mainly for illustrative purposes.

The teacher interviews showed that *Austrian* teachers lay emphasis on the development of basic knowledge in economics. Even if the teachers are aware of the importance of social and self-competencies, most of them criticized that they haven't learned the 'tools' to develop these competencies among pupils. Furthermore, the curriculum is seen as too complex and does not leave enough time to do more, for example, project work or visits.

In *Germany*, all interviewed teachers highlighted the development of social and self-competencies as a priority in lower secondary schools. In many cases the teachers considered the promotion of knowledge based competencies in business and economic less important: 'I can't recognize the importance of economic topics. I think the pupils don't need any economic theory. They should be familiar with what could come towards them as a citizen, consumer or employee, but I don't think that they have to know the conditions of the complete market.' (Teacher 2, Germany)³. In many respects, the interviewed teachers believed that there was an over-representation within the curriculum of aspects about economic and industry environment, opposed to business related topics. The interviewed teachers stressed the importance of self-competencies with reference to achievement and motivation, organizing abilities and self-managed learning. As seen in the *Austrian* case, many teachers emphasized the importance of practical experiences in the form of internships or factory visits for their pupils.

The interviewed teachers in *Scotland* have a broad understanding of pre-vocational education, including aspects of life and citizenship: 'It is like the continental approach to education, it should not just be about how to do, but how to be.' (Teacher 1, Scotland). When taught within schools, the pre-vocational courses were often seen as a mechanism for retaining young people within education as well as preparing them for the world of work. Scottish teachers commented that taking responsibility for their learning and teamwork are the most important competencies: 'The school leavers need good employability skills, they need to be motivated and their timekeeping and attendance should be good They also need to show respect ... occupational, business and leadership skills are not really necessary for school leavers.' (Headteacher 3, Scotland).

³ Original quotation of the teachers (anonymised).

The interviewed teachers in *Poland* emphasized knowledge based competencies in economics: ‘Understanding the principles of the market place is really important ... equipping the pupil with knowledge of the economy is vital ... , they need to be free of the behaviours of their parents from a bygone age [socialist].’ (Teacher 1, Poland). Most of the interviewed teachers think that the majority of pupils will continue their education. Accordingly, the teachers stated that the development of knowledge based competencies in business is less relevant for their pupils. Similarly to the teachers in Austria and Germany, the Polish complained about the insufficient time within the curriculum to teach pre-vocational education, as this required a more active pedagogy and would take up considerable space in an already crowded core curriculum.

In the same way, interviewed teachers in *Latvia* agreed that the development of social competencies among young people is an important task, but, on the one hand the time provided by the curriculum is too little and, on the other hand, school equipment is rather poor. As in many other countries too, in Latvia pre-vocational education is included in a subject cluster of Ethics, Economics, Health and Social Studies. Usually, teachers are not trained to teach this subject cluster; furthermore, they complained about the materials and textbooks available.

Hungarian teacher interviews show that gaining general and theoretical economic knowledge has a central position in teaching pre-vocational education: ‘Economic knowledge forms the central part of the curriculum.’ (Teacher 4, Hungary). Nevertheless, developing self and social competencies among young people is seen as the most important task in pre-vocational education: ‘When our students enter the world of work, they would feel lost without self competence.’ (Teacher 2, Hungary). But, in the same way as their colleagues from other European countries, Hungarian teachers also criticized the lack of time in the curriculum for engaging in a more active pedagogy.

Even though most of the interviewed *Portuguese* teachers approve of the development of knowledge based competencies in business and economics among pupils, they do not see any school subject in the curriculum where they could develop these competencies. Cooperation with external (business) partners is practically non-existent in Portugal. Pupils in general compulsory education do not have any contact with the professional world during their whole school time.

Discussion

This study attempted to identify and explain how the pre-vocational education curriculum is organised and represented within different European countries. Another

interest was how this *prescribed* curriculum was taught (*enacted*) within schools. As stated previously, none of the examined countries, with the exception of Scotland, currently provides for pre-vocational education or economic/business studies, a free-standing subject in the last two years of general compulsory schools. Pre-vocational education is usually integrated into other subjects or subject clusters like Geography, Civic Education or Social Science. Due to the integration of pre-vocational education in different school subjects, but also as a result of former reforms in the education system and teacher training, in some countries (e.g. Germany and Latvia), teachers are not especially trained for teaching competencies in the field of pre-vocational education. For example in the case of Latvia, the subject Social Science is a new subject cluster, including Ethics, Economics, Health and Social studies. Teachers usually have studied only one of these four sub-subjects, but have to teach them all.

Comparing the data from the curriculum analysis with that of the interviews with teachers, it could be stated that across all seven countries of the study the taught (*enacted*) curriculum depends strongly on the personal interests or former field of study of the individual teacher. On the other hand, the actuality of the *prescribed* curriculum in schools is influenced by the time provided by the curriculum and the materials and resources available at the school-level. In particular, most of the interviewed teachers across the studied countries criticize the lack of time in the curriculum to develop social and self competencies among pupils as this required a more active pedagogy and didactics. Very often curricula in pre-vocational education are overcrowded with knowledge based competencies (as for example in the case of Poland and Latvia); where pre-vocational education is taught within a subject cluster (like Social Science) and the curriculum integrates different subject areas like Civic Education, Geography etc. In some countries, as in the case of Germany, where the curriculum lacks an obligatory timeframe which regulates the teaching-hours for each sub-subject, the weighting of each sub-subject depends solely on the teacher's decision. Consequently, the teacher's perception of the time available for teaching pre-vocational education depends largely on the subject-structure itself.

It can be seen, that there is a strong link between the teacher's perception of the importance of pre-vocational education (here mainly economic and business education) and the teacher's individual background: Most of the interviewed teachers who have not studied any subject within the field of pre-vocational education (e.g. Economics, Business and Entrepreneurship etc.), see less of a relevance of pre-vocational education for their pupils. Teachers missing knowledge based competencies in business and economics, linked with the lack of a free-standing subject in pre-vocational (as well as in economic and business education in nearly all of the analysed countries), may be one of the factors that explains students' lack of knowl-

edge or interest in economic and business issues. Furthermore, there is a positive relationship between the work experience of some teachers out of the education sector and their approval of career guidance measures and the development of practical experiences for pupils with the world of work. In Germany, for example, only one out of the six interviewed schools has a student-run 'Young Enterprise' company which works closely together with other external partners. This initiative goes back to a teacher who had been an entrepreneur in his former career.

Finally, it can be stated, that in none of the studied countries pre-vocational education is part of the original final exam at the end of compulsory schooling. This might be another reason for the divergent answers of the teachers regarding the importance of pre-vocational education for the pupils. Regarding the differences between the *prescribed* and *enacted* curriculum in the seven countries of the study, the results of the *Austrian* teacher interviews reflect what the analysis of the curriculum has already shown: There is a high priority on knowledge based competencies in economics and a lesser interest in business related contents and competencies. On the other hand, the curriculum analysis showed that nearly one half of the analysed curriculum material could be coded as self and social competencies, but interviewed teachers criticized the weak structural framework and the missing links between the knowledge based competencies and the soft skills in the curriculum. The teachers asked for more structural support on how to develop social and self competencies among pupils while teaching specific contents.

In *Germany* in many respects, the interviewed teachers believed that there was an over-representation of aspects of economic and industry environment as opposed to business related topics within the curriculum. This estimation is congruent with the results of the curriculum analysis. German teachers mentioned that a further focus in the curriculum for pre-vocational education lays in developing self competence in autonomous learning and self-guided working. By contrast, the findings of the curriculum analysis show that curricula focus particularly on developing social competencies; social competencies accounted for around 30% of all the material analysed. There was particular emphasis on aspects of team-working skills and communication skills, although around 20% of all the material analysed could be seen as focusing on self competencies with emphasis on entrepreneurial thinking.

The documentary analysis of the pre-vocational education curriculum for *Scotland* showed a clear focus on industry-wide and firm specific skills. Furthermore, the curriculum data highlighted the importance of self competencies and social competencies. The interviews with teachers highlighted that the main focus of pre-vocational courses, as far as the teachers are concerned, is on pupils gaining social and self competencies, rather than those related to business or economics. The teachers said that the courses on pre-vocational education not only provided young

people with experience in a vocational area, but also gave them a variety of useful, transferable skills. All the courses include a unit on employability and teachers emphasised these employability skills as being an important component of the programmes.

The curriculum analysis data indicated that in *Poland*, as in many other countries of the study too, the pre-vocational education curriculum tended to prioritise strongly knowledge based competencies in economics. Furthermore, the Polish curriculum analysis showed a lack of self competencies. Teachers favoured developing self and entrepreneurial competencies among pupils; however they did not indicate gaps in the curriculum when they were interviewed.

Although the analysis of the *Latvian* curriculum for pre-vocational education showed many references to build up social and self competencies among pupils, the interviewed teachers complained about the lack of time to develop these competencies. As in the Austrian case, teachers ask for more detailed indications in the curriculum or special material for fostering self and social competencies. Similarly to the results of the Latvian curriculum analysis, where knowledge based competencies in business are under-represented, teachers from Latvia, and also teachers from Portugal, mentioned that these competencies are not relevant for their pupils because most of them will continue their general education to the next level and there is no need for specific business knowledge at this stage.

In *Portugal*, teachers have confirmed what was found in the curriculum analysis, the non-existence of any subject specifically orientated to pre-vocational or business/economic education. Even if a few elements of economic or business education could be detected in the curricula for technological education, teachers teaching this subject see it as a 'practical subject' for developing manual skills and not to teach economic principles.

In *Hungary*, where the curriculum neglects knowledge based competencies in business, teachers put a greater stress on this during their lessons. One quarter of the analysed curricula in Hungary referred to the development of social competencies. In practice, Hungarian teachers agree with their colleagues from the other six countries of the study that the time frame in the curriculum is not enough to train them with special methods and an active pedagogy.

Outlook

This case study approach also has its limitations. Our concern has been with the particular rather than the universal and, as such, the study cannot be generalised across

a wider population. The interest of the study, nonetheless, has been at the theoretical level and this can form the basis for further research. The earlier pioneering work on the concept of the prescribed and enacted curriculum by Bloomer (1997) and Edwards et al. (2009) has been fruitful and provides the basis for explaining why many curriculum policies fail at the hurdle of implementation. We also believe that there are factors associated with the ‘institutional logic’ of curriculum-making that are germane to this study and can contribute to a better understanding of why teachers can exert such a strong influence on how the prescribed curriculum is enacted in practice.

Appendix 1

Code	Criteria of knowledge based competencies in economics	Code	Criteria of knowledge based competencies in economics
E 1	<p>Basic principles of economics Further explanations: Understanding economics as the study of how society manages its scarce resources; understanding of basic economic phenomena</p>	B 1	<p>Business and its external environment Further explanations: Various types of business activity and organization; financial institutions and their role in the financial structure; business external environment, e.g. economic systems, structure of industry, location of industry</p>
E 2	<p>The market forces of supply and demand Further explanations: Elasticity and its application (how much buyers and sellers respond to changes in market conditions); aggregate demand and aggregate supply (the aggregate-demand curve and the aggregate-supply curve)</p>	B 2	<p>Corporate strategy and planning Further explanations: Methods used in forecasting and planning enterprise goals and department objectives; the nature of decisions and methods of statistical analysis in making decisions</p>
E 3	<p>Trade and globalization Further explanations: International trade (the effects of international trade on economic well-being); open-economy macroeconomics and macroeconomic theory of the open economy</p>	B 3	<p>Organizing Further explanations: Organization structure, levels of organization; importance of authority, responsibility, and delegation</p>

E 4	Actors in the market Further explanations: Consumers, producers and the efficiency of markets; understanding how different actors in the market behave; understanding of the theory of consumer choice	B 4	Directing Further explanations: Leadership, relationship and communication between managers and employees
E 5	The monetary system Further explanations: Saving, investment and the financial system; money growth and inflation; understanding of the role of the money in economy	B 5	Controlling Further explanations: Principles of effective control, budgetary and non-budgetary, financial accounting conventions
E 6	Government policies and its influences Further explanations: The design and costs of the tax system; externality (for instance, economy and ecology); public goods and common resources (goods without market prices); monetary and fiscal policy	B 6	Marketing and sales management Further explanations: Selling, transportation, storage, gathering market information, etc
E 7	Market forms Further explanations: Firms in competitive market; monopoly; oligopoly	B 7	Production and operation management Further explanations: Production function; the place of product design and development; the location of plant; the layout of equipment; the importance of planning and control
E 8	Firms in the market Further explanations: Costs of production The behaviour of competitive firms; factors of production (for instance, labour, land, and capital)	B 8	Human resource management Further explanations: Recruitment selection; training and development; promotion and transfer; redundancy and retirement,

E 9	Income Further explanations: Earnings and discrimination; income inequality and poverty	B 9	Administrative management Further explanations: Planning and organizing the office; office machinery and equipment; human aspects of computer usage
E 10	Indicators of economy Further explanations: GDP, CPI...		
E 11	Labour market Further explanations: Unemployment; short-run trade-off between inflation and unemployment		
Code	Criteria of social competencies	Code	Criteria for self-competencies with emphasis on entrepreneurial thinking
SO 1	Communication ability Further explanations: A person has the ability to communicate, when he/she is able to express him/herself verbally and nonverbally and interpret other people's messages properly and know how to react based on them	SE 1	Internal locus of control Further explanations: Decision-making ability; assertiveness; self-marketing/organizing competence; visionary thinking;
SO 2	Conflict ability Further explanations: Conflict ability is concerned with recognizing a clash of interests and the willingness to resolve them amicably	SE 2	Achievement motivation Further explanations: Plan, organize, readiness for intellectual achievement; orientation towards achievement; motivation for achievements; goal-orientation; lifelong learning; resistance against stress, ability to work under pressure;
SO 3	Ability to give and receive criticism Further explanations: Ability to give and receive criticism. Someone who is ready and able to deal with other people's mistakes constructively and fairly	SE 3	Eagerness for independence Further explanations: Personal independence; leadership; creativity; imagination;

SO 4	Team ability Further explanations: Readiness and competence to cooperate with other members of a group in a goal- and task-oriented way	SE 4	Moderate tendency to take risks Further explanations: Readiness for moderate risks; entrepreneurial thinking as employee; grasp for trends and market developments;
SO 5	Empathy Further explanations: Understand another persons' situation and to deal with them politely, and with respect		

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Are Vocational Qualifications Vocational?

Jim Gallacher Robert Ingram and Fiona Reeve

Introduction

In this paper we explore the role of short cycle higher education qualifications in the context of an increasingly credentialised society. We are suggesting that, while many of these qualifications and programmes have been developed with a strong emphasis on occupational education and training, and some continue to have an important role in this respect, they are increasingly influenced by other agendas, and in particular many are now used by students as ‘transitional’ qualifications, which provide access to bachelor degree programmes. As a result these are now sometimes referred to as ‘hybrid’ qualifications (Raffe and Howieson, 2011). It is suggested that there is now ambiguity surrounding the role of these programmes, and the different agendas which they are expected to address are not necessarily or always compatible. This raises questions about the extent to which these qualifications continue to be well suited to purposes for which they were established, and the roles which they now have.

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The paper focuses particularly on Higher National Diplomas and Certificates (HNC/Ds) in Scotland and Foundation Degrees (FDs) in England. Comparison between developments in these two countries within the UK is interesting because of the divergence in policy which has taken place. In England perceived deficiencies in the existing HNC/D programmes led to the establishment of a new type of hybrid qualification, the FD, while in Scotland modernization of the existing system was pursued. This enables us to consider the impact of national policy initiatives in responding to some of the tensions which are now present within programmes of this kind.

The Context

Short-cycle higher education refers to HE provision which is shorter in duration than the traditional undergraduate bachelor degrees, and provides qualifications at a lower level. It is often provided in colleges or similar institutions, although some of this provision is to be found in the university sector. Much of it has traditionally had a particular emphasis on preparing people for the world of work, and has been focused on intermediate level skills and occupations rather than the higher professional level occupations. In Scotland, HNC/Ds (requiring the equivalent of one or two years of full-time study respectively) continue to provide the main framework for work of this kind, while in England there has been a decisive move away from this provision towards FDs (requiring the equivalent of two years of full-time study).

While these qualifications have traditionally had this clear focus on education and training for certain occupational roles, they have increasingly been recognized as being important parts of mass higher education systems. In this context it has been recognized that these qualifications often have a 'transitional' role, enabling students to progress to bachelors degrees with varying levels of credit. They have also been seen as making important contributions to the widening access agenda by providing second chance opportunities for people to enter higher education who do not have traditional qualifications, many of whom come from areas of social and economic deprivation (Gallacher, 2009; Parry, 2009).

We are suggesting that if these qualifications are to continue to make the most effective contribution, within the context of changing systems of vocational training and higher education, the differing, and potentially conflicting, roles which these qualifications can have must be more clearly recognized. This could have important consequences for the planning and development of these programmes, and the recognition of the need for more effective forms of cooperation between colleges, universities and validating agencies.

Sources

In this article we will draw on data from two research projects which we have undertaken.

The first of these is a comparative study of HNC/Ds in Scotland and FDs in England (Gallacher et al., 2009). While the main focus of this study was on the role of work based and work related learning in HNC/Ds and FDs, it has also enabled us to consider the national policy frameworks and the processes of programme development and implementation.

The second study is a project to track HNC/D students in Scotland after completing their HNC/Ds (Ingram and Gallacher, 2011). This longitudinal study has provided us with more systematic data on the aspirations of HNC/D students and their progression after completing their qualifications. This enables us to consider the extent to which these courses are being used for occupational education and training or transition to further study. We will also draw on national data sources.

The National Policy Context

Despite differences in national policy frameworks between England and Scotland, three agendas which these short cycle qualification are now expected to address can be recognized in both countries. These can be identified as: skills development and training; enabling progression to bachelor degrees; and increasing flexibility in, and access to, higher education.

Skills Development and Training

Skills development and training has traditionally been seen as the central function for these qualifications, and while there have been important developments in the policy frameworks in both England and Scotland these have reinforced the importance of this role. However in England the changes have been more radical, and have been designed to specifically address deficiencies in previous provision.

In England FDs were established in 2001 to provide a new form of vocational qualification. This was associated with a growing concern about a perceived skills deficit at the intermediate (associate professional and technical) level, the failure of HNs to address this problem and perceived dissatisfaction amongst employers, and a related concern to introduce a new qualification which would be more ef-

fective in responding to these issues (DfEE, 2000; Blunkett, 2001). As a result the new FDs were to be designed in ways which, it was intended, would have greater impact in meeting skills needs. The requirements for these qualifications were codified in the Quality Assurance Agency (QAA) Benchmark which was drawn up for those developing these qualifications (QAA, 2004). The importance of *work based learning* (WBL) was emphasized, and the contribution of this to the students' learning experiences was seen as being crucially important. A related theme in ensuring the vocational relevance of these programmes is the idea of *employer involvement*. A third theme is the one of *partnership*. It is emphasized that partnerships between employers, universities, colleges and Sector Skills Councils (SSCs) would be seen as vital in providing programmes that are relevant, valid and responsive to the needs of learners and employers.

There was no similar radical reappraisal in Scotland, and confidence was expressed in maintaining HNC/Ds as the main qualifications of this type. However a five-year 'modernization' programme, became operational in 2003, which was designed to review HNs and 'ensure that these key qualifications remain fit for purpose and provide the Scottish economy with relevant labour market skills' (SQA, 2007). As part of the review and modernization programme SQA developed *design principles* which referred to the role of HNs in supporting '... technician, technologist and first line manager occupations for over 75 years, including progression in professional qualifications and other HE awards'. The design principles have been developed to ensure that the new or revised programmes will 'continue serving these occupations' (ibid., 2005).

It can be seen then that the role of these types of qualifications in meeting the changing skills needs of people in associate professional and technical occupations has continued to be emphasized in recent policy developments, despite the differences which have emerged between Scotland and England. We will consider the impact of these different approaches in our later discussion of the development and implementation of these programmes.

Providing Progression Routes to Bachelors Degrees

A second set of objectives which has been increasingly recognized for these qualifications is that they should provide opportunities for students to progress to bachelor degree level study. This has again been most clearly emphasized in the guidelines for FDs. The QAA Benchmark states explicitly that they should provide opportunities for *articulation* and *progression*, and in particular it requires opportunities for progression to honours degrees (QAA, 2004, p. 5). They should also provide routes

towards degrees for people with other qualifications, e.g. apprenticeships, and include arrangements for the accreditation of prior experiential learning (APEL). The idea that a key function of these qualifications was to provide progression routes to bachelor degree programmes was further reinforced by the role given to universities in validating FDs. While the power of validation has now been extended to colleges which can meet certain quality assurance criteria, most FDs have been validated by universities, and as a result the academic requirements associated with degree level study have been strongly emphasized in developing and approving these qualifications in many cases. This will be discussed further below.

In Scotland the emphasis on providing progression to bachelor degree level study has been less explicit. The possibility of enabling progression to degrees is noted in the introduction to the SQA design principles, and it is recognized that progression within a particular subject area could be a specific aim for a programme (SQA, 2003). Despite these references, the issue of enabling progression to degree level studies has not been recognized by SQA as a key role for these qualifications and it is their role as vocational qualifications which continues to be emphasized. However it has become increasingly clear that many students are now using these qualifications for progression to bachelor degree programmes, and this has been particularly associated with the growth of fulltime HNC/D programmes over the last 15 years. As a result the Scottish Funding Council (SFC) has now established five regional articulation 'hubs'. These hubs are based on universities which are given funding to enable them to strengthen links between universities and colleges, and provide more, and better structured articulation routes from HNC/Ds to bachelor degrees. The Open University is being funded in a similar way (SFC, 2008).

Increasing Flexibility and Widening Access to Higher Education

The third set of objectives which have been identified for these qualifications is that they should contribute to greater flexibility and widening access to higher education. It can again be observed that these objectives have been expressed most clearly with respect to FDs. The QAA Benchmark identifies the importance of both *accessibility* and *flexibility* for these qualifications. It is stated that it is important to provide opportunities to 'earn and learn' through WBL (QAA, 2004, p. 5). It is suggested that flexibility should be a key aspect of FDs; this includes full-time, part-time, distance, work-based and web-based learning opportunities and flexible progression routes. In these ways it is suggested that these programmes can contribute to the lifelong learning and widening access agendas by providing new routes into higher educa-

tion for students who would otherwise find it difficult to attend existing provision or who would not be accepted onto such programmes.

In Scotland there is no explicit recognition of this objective in the SQA guidelines for the development of these qualifications, and while many HNCs were developed as part-time programmes to provide education and training for people who were already in employment, there has been a significant decline in the numbers of students registered on these part-time programmes over the past ten years (Gallacher, 2011). However it is again in the SFC's strategies that the role of these programmes in widening access to higher education has been clearly recognized, particularly through the establishment of the 'articulation hubs' referred to above. Many of these programmes now provide second chance routes into higher education for students who do not have the qualifications needed for direct entry to university degrees, many of whom are also adult returners (Gallacher, 2009).

Ambiguity in National Policy

It can be seen then that a number of policy agendas now exist with respect to these qualifications, in both England and Scotland. It can also be noted that while these agendas do not necessarily conflict they are sufficiently different to create potential difficulties in reconciling them. Thus, in the case of FDs, the requirement that they should provide access to honours degree programmes, and associated with this, the influence which universities have through their role as validating bodies, can be seen to conflict with the emphasis on these qualifications being employer led and work based. Conversely, in the case of the HNC/Ds in Scotland, there is an increasing emphasis on the role of these qualifications in enabling people to progress to bachelor degree programmes through articulation, but given the emphasis which there has been on the vocational nature of these qualifications, they have not really been designed with this progression as a key objective. The third objective which we have identified above – increasing flexibility and widening access – is not one which necessarily fits well with either of the other two, although, given the fact that these courses are often second chance routes to qualifications for people who have less success through traditional academic routes, they do often make an important contribution in this respect. However programmes which have their primary objective as vocational preparation, cannot have widening access to higher education as an objective of *equal* strength.

Programme Development and Implementation

We will now consider to what extent, and in what ways, the differing agendas which have been identified as shaping the development of these qualifications at the level of national policy have shaped developments at the programme level. The data which are drawn on in this section come mainly from a comparative study of HNC/Ds and FDs (Gallacher et al., 2009). For this part of the study staff involved in developing and running 16 FDs, 22 HNC/Ds and a further eight staff employed by SQA at a national level to assist with the development of these programmes were interviewed. This included both HN and FD programmes from the Agriculture and Land-Based sector; Art and Design; Computing; Early Education and Child Care; Engineering; Fashion/Beauty; Hospitality/Travel and Tourism; Sport and Leisure and Management.

Skills Development and Training

Data from this study show clearly the continuing importance of the skills development and training in shaping these programmes. A number of policy drivers which are common to both Scotland and England can be observed. Firstly there is the issue of skills gaps. Thus, in the cases of an FD in the area of Art & Design, a Department of Trade & Industry (DTI) Report had highlighted lack of skills within the fashion industry, and this was reflected in this comment from the staff member for this course:

... and the general feeling was that graduates were coming out of fashion courses, but without any real skills, because the numbers are so huge the actual skill base of construction and pattern, but used in a creative way for design, is actually missing.

In Scotland in a similar way, in the field of broadcasting changes in structure and technology have led to the redevelopment of HNs to train people up with skills which reflect these changes:

... Obviously the technology in the sector moves pretty quickly, so employers need people not only who come out with a piece of paper in their hand to say that they have a HNC or an HND but one of the employers gripes really, is that even graduates can come out and they don't know one end of the camera to the other.

Changing student demand is a second factor, as indicated in this response from staff developing of a new HNC in Fashion Make-up:

... you know students needs change, industry's needs change and it was desperately crying out for that change to be there and one of the things we identified in those years is that a lot of the kids were interested in fashion make-up, you know they wanted to work with fashion make-up, work with photographers...

Thirdly changes in national policy for the public sector, and related changes in occupations and the training needs of staff in these sectors, emerged as a driver of change in both countries. Thus one of our Scottish respondents responsible for an HNC in Early Education and Childcare noted:

... practice had changed quite considerably over the years since the first eh the award was actually introduced em job roles had changed and its very much related to specific job roles within the sector, also the introduction of registration with Scottish Social Services coming into effect as well and the HNC is one of the recognised awards which may enable candidates to register ... as a child care worker.

In England the development of FDs in the subject area of Early Education had been stimulated and shaped by changing national requirements for workers in this sector, for example the introduction of new qualification levels and packages of financial support for both students and employers to take up such opportunities.

While these drivers of policy development can be noted in both Scotland and England, the distinctive impact of the FD policy initiative in strengthening this agenda can be noted in a number of ways.

Firstly there is more emphasis on responsiveness to local or regional markets in the English development. Thus, for example, staff developing an FD in Marine Engineering emphasized the regional labour market: 'Within the ... travel-to-work area, there was some research done by University of xxx about shortages in marine skills and so on in the area. So, a lot of the requirement for it came from there.'

The importance of securing employer involvement as ways of ensuring that programmes are as effective as possible in meeting skills needs also emerged as a stronger theme for FDs. Almost all FDs reported some measure of success in achieving employer involvement, although the nature and extent of this varied considerably. The director of an FD in Entertainment Management was able to report that industry representatives helped write the units. However this might be seen as one end of a continuum, and, despite this emphasis in national policy, a number of staff responsible for FDs reported the difficulties of trying to involve employers in developing FDs, and a respondent from an FD in multi media and internet technology referred to the 'myth' of employer involvement in assessment.

In Scotland the level of employer involvement appears to be generally lower, reflecting the different national policy framework. The SQA as the national body responsible for the development and validation of these awards arranges surveys of employers as part of the development or review of any HN programme. However

the level of feedback from these surveys was reported to be variable. The highest level of involvement in programme planning and implementation was reported by staff involved with the HNC in Early Education and Childcare. This also involved the Scottish Social Services Council (SSSC) which is responsible for development and recognition of staff in the child care area:

... em and also Scottish Social Services Council were also representing employers as well because their employer representative amongst it they have other roles as well so yes wide representation from employers we couldn't have moved forward without them, without their buy into it and consultation, because it is very much related to job role its very job role specific and there's a huge work base element to it.

A number of other programmes also reported various forms of involvement with employers which included customizing the programme to meet specific local needs, guest and/or part-time lecturers and student placements. However the nature and extent of these links was more limited than those reported on the FDs. There was also evidence of courses with virtually no links with employers, as indicated by this response from a lecturer responsible for an HNC in computing: 'So my links with employers are poor because there aren't any down here.'

A similar pattern can be observed with respect to WBL. All FDs reported some form of work based or work related learning, although the nature and extent of this varied considerably between programmes. Some full-time programmes, such as the FD in Events Management, reported on a range of placements, while others such as the FD in Fashion Design reported that placements were not possible in the fast moving fashion industry, but industry insiders came in to set the students 'real' briefs, and then returned to 'crit' them when they were completed. Courses in computing also reported problems in securing placements, and one described the use of software to create virtual WBL environments for students: 'We are just looking at purchasing some virtual work based learning software, where you set up a virtual company ..., because the placement thing is the most difficult to achieve.'

With respect to part-time students on FDs, e.g. in Early Years or Engineering, there was evidence of encouraging students to integrate the learning they achieve through work into their studies by creating appropriate assignments.

In Scotland the provision of WBL was patchy across the range of programmes. In some, such as the HNC in Early Education and Veterinary Nursing placements were an integral and essential element of the programme, reflected in this comment from a member of staff responsible for the HNC in Early Years: '... we have very strong links with employers and that's been over many years of building up and collaborating partnerships.'

In other areas various forms of work related learning were reported. Thus in hospitality there was both in-house work related learning in the college restaurant

and industry based placements. However in other courses work related learning was very limited, and at the end of this continuum the HNC in computing had no WBL at all.

A pattern which emerged when comparing England and Scotland was that, while the national policy frameworks did make a difference, and ensured that there was a greater effort to secure some employer involvement and WBL in England, differences between occupational sectors were also of considerable importance. We have noted the high level of employer and professional body involvement in programmes in the fields of Early Education and veterinary nursing in both England and Scotland. In these cases the objective of preparing students for a specific occupational role appeared as the dominant driver in the development and implementation of the programmes. Similar examples can be found in other fields of study and work and in particular in the public sector. In these cases employers and/or professional bodies have key roles in helping to shape the development of the programmes. There are also well established traditions of work based training as part of the programmes and professional cultures which support this. By comparison in other areas, such as computing, there are no established traditions of this kind, and it is much more difficult to achieve this level of employer or professional body involvement. As a result the role of these programmes in direct skills training and preparation for occupational roles is more limited. We will return to this issue below.

Enabling Progression to Bachelor Degree Level Study

With respect to providing opportunities for progression to bachelor degree level study, the impact of the differing national policy frameworks can again be observed.

This was noted as a central element by all respondents involved with FDs, and the validating role of universities emerged as an important factor in shaping these programmes. This is reflected very clearly in this statement from the programme director for an FD in Sport and Exercise Development: ‘...it was most definitely the university that took charge because they were very keen to make sure that the progression from level two to level three was as seamless as possible for the students because that was what we were mainly concerned about’.

However it can be noted that some respondents suggested that this could lead to some conflict with the role of the programmes in skills development and training. For example, the programme director responsible for an FD in Chemical Engineering noted the need to move from an innovative first year based on industry-set projects to a more conventional second year to prepare students for entry to an honours degree in third year. In a similar vein the respondent responsible for the FD in

Graphic Design for News Media commented on the tensions in programme development: ‘... what we have learned is that the square peg round hole of conflicting academic standard and vocational standard on foundation degree has been a sticking point. Erm, with the vocational direction in mind, but with the academic erm, rigour running across the courses causes problems.’

In Scotland, while the value of providing progression routes to bachelor degrees was recognized by many of those involved with the HNC/Ds, this did not have the central place which it had in the development of FDs. The involvement of staff from universities in programme development and validation panels was sought in appropriate circumstances, but this was generally much more limited and patchy when compared with FDs. However some staff, for example in the area of computing, did recognize that their main function was to prepare students for progression to bachelor level study in the universities.

Flexibility and Access

We have noted above that the third agenda – increasing flexibility and widening access – has emerged in quite different ways in Scotland and England. National policy for FDs has emphasized clearly the importance of flexibility, and providing opportunities to ‘learn and earn’. In the programmes included in our study a wide range of responses could be observed. In some cases, for example the FD in early years, the programmes were clearly designed to provide opportunities for part-time study for those in work, in others there was a fluctuating population of both full-time and part-time students, while some, such as the FD in fashion Design, were clearly full-time programmes. This pattern is reflected in the national data which shows that 43% of FD students were part-time in 2009–2010 (HEFCE, 2010). While in our study we did not explore in any detail the role of these programmes in widening access, national data show that around 20% of FD students are from low participation neighbourhoods (HEFCE, 2010).

There has been no similar strong policy steer in Scotland to emphasize the role of HNC/Ds as flexible part-time programmes. HNCs were traditionally part-time programmes designed to provide learning opportunities for people in employment, however the numbers of part-time students enrolled in these programmes has declined markedly over the past ten years, while the numbers of full-time students has been increasing (Table 1).

Most part-time students continue to be enrolled on HNCs rather than HNDs, and while it would appear that they do continue to provide flexible part-time routes for many students, this is not a policy which is being vigorously pursued.

Table 1 Numbers of students enrolled on HNCs & HNDs in Scotland's Colleges (Source: SFC (2011a))

	Full-time		Part-time		Total	
	Numbers	%	Numbers	%	Numbers	%
2001–2002	26,579	62	16,602	38	43,163	100
2009–2010	27,838	76	8,850	24	36,688	100

With respect to the role of HNC/Ds in widening access to higher education, there is certainly evidence that they continue to make a substantial contribution to this agenda with around 20% of HNC/D students residing in the most deprived quintile areas (SFC, 2011b). However this can be seen to reflect a wider role of Scotland's Colleges in providing a wide range of opportunities for students from areas of social and economic deprivation to access education, rather than a particular policy priority for these programmes (Gallacher, 2006).

It would appear therefore that the three agendas we have identified can be seen to influence the processes of programme development and implementation. However the strength of these different agendas has been shaped by both national policy and occupation sectoral differences.

Students Aspirations and Destinations

Having outlined the national policy frameworks which have been creating the multiple agendas for these qualifications, and the impact of these agendas on programmes development and implementation, we will now consider the uses which students actually make of them. We will again compare England and Scotland. For both countries we will draw on national data sources, and additionally for Scotland data are available from a tracking study of HNC/D students which has been undertaken in the Centre for Research in Lifelong Learning (CRLL) in Glasgow Caledonian University (Ingram and Gallacher, 2011). For England data are drawn from a number of other, mainly small scale, studies (Greenbank, 2010).

When the national data on student destinations after completing their FDs or HNC/Ds are considered there is evidence of the differing uses to which students are now putting these qualifications. Data in England and Scotland are gathered in rather different ways, but the pictures which emerge are broadly similar.

Table 2 Destinations of FD qualifiers from English HEIs, 2007–2008, six months after qualifying (Source: HEFCE (2010).¹)

Destination	Full-time		Part-time	
	No.	%	No.	%
Studying (not employed)	2,705	46	295	11
Studying and employed	1,135	19	1,030	37
Employed	1,635	28	1,315	48
Unemployed	220	4	40	1
Other	200	3	80	3
Total DLHE respondents	5,895	100	2,760	100

From the data included in Table 2 it can be calculated that a majority of all FD students (full-time and part-time) in England are using their FDs to enable them to progress to further study. However there are notable differences between full-time and part-time students. It can be seen that a total of 65% of full-time students proceeded to further study after qualifying, while only 28% used their FD to enter the labour market without engaging in any further study. By contrast, part-time students were more likely to be in the 'employment only' category, reflecting the fact that for many of this group their studies would be associated with their employment.

Data for students completing HNC/Ds in Scotland are gathered on a rather different basis. Almost all of these students are studying in FE colleges (which are now referred to as Scotland's Colleges). The SFC gathers data each year on the destinations of students completing 'HE Group Awards', the vast majority of whom are HNC/D students. In 2008–2009 64% of students provided data on their destinations after qualifying. While these data are therefore not complete, they do give us a clear indication of patterns at a national level. From Table 3 it can be seen that, for students with known destinations, around two thirds (67%) were progressing to further study, while only 25% were remaining in, or progressing to, employment only. Unfortunately these data are only available for full-time students.

The Scottish data also begin to enable us to see the emergence of a continuum of programmes. In some subject areas relatively few students are using these to enter the labour market directly e.g. in computing only 9% entered employment,

¹ The data for FD students in England which is published by the Higher Education Funding Council for England (HEFCE) covers only students registered in HEIs, and excludes those registered only in colleges. However this will represent around 75% of all FD students. The response rate to this survey is around 80%, and HEFCE describe the findings as 'robust'.

Table 3 Destinations of full-time students gaining HE Group Awards in FE Colleges in Scotland 2008–2009 (Source: SFC (2010))

Destination	%
Further study	67
In employment	25
Believed unemployed	7
Other	1
Total	100 (N = 7692)

while 86% progressed to further study, and business and management had a similar profile with 16% entering employment, while 78% progressed to further study. By contrast among those studying within the field defined as 'social work' (although this would be mainly social care rather than social work) 52% entered employment while 38% progressed to further study, while in engineering the figures were 39% and 53% respectively.

These national data, while useful, provide only a rather broad overview of students intentions and behaviour. To examine these issues more fully a longitudinal tracking study of HNC/D students was begun in 2009 by staff in CRLL (Ingram and Gallacher, 2011). This study has gathered data from students completing HNC/Ds in summer of 2009 and 2010. Data were gathered from a sample of programmes in six colleges in the Greater Glasgow area which were selected to ensure that the study would include both full-time and part-time students on a wide range of programmes. The full list of programmes included can be seen in Table 6. All of the students who were still actively participating in the programmes included in the sample were contacted and a 72% response rate generating 880 participants was achieved. All of these respondents were asked to provide contact details for a follow-up some months later to establish their actual destination. A total of 452, which represented 60% of those providing contact details, responded to this follow-up.

Table 4 allows us to compare the stated intentions of HNC/D students in the months immediately before completing their programmes, and the actual destinations reported some months after completion.

These data are consistent with the national data, indicating that the majority of students now see these qualifications as routes to further study. This relationship emerged particularly strongly when students were asked to indicate their intentions prior to completing their programmes. At this point 74% indicated that they intended to proceed to further study, although a number of these (35%) intended to

Table 4 Intentions and destinations of HN Tracking cohort on completion of HN programme (Source: Ingram and Gallacher (2011))

Route	Intentions (%)	Destinations (%)
Employment only	26	33
Further study only	39	29
Further study and unemployment	35	28
Unemployed	–	7
Other	–	2
Total	100 (N = 872)	100 (N = 457)

combine this with employment. Greenbank's study of business and management students reports a similar figure of 'just over three quarters' of students choosing to enroll on FDs with the explicit intention of progressing to an honours degree (Greenbank, 2010). However the data on actual destinations in our HN study indicate that a considerably lower figure of 57% have proceeded to further study. Further data which we have gathered indicates that a substantial number of these students had already changed their minds by the time they left their programmes, and their final destinations were not forced on them by failing to gain access to a chosen programme of further study. The reasons for these changes are varied, and include changing employment prospects, delaying plans to progress to degree level study and family commitments. It would appear that this is associated with the heterogeneous nature of this group when compared with students entering directly into bachelor degree programmes in universities. They are older students, they are more likely to come from areas of social and economic deprivation and to lack traditional entry qualifications. The decision making processes for these students can as a result be complex. Greenbank has also noted the extent to which the 'circumstances and values' of FD students act as restraints on decisions regarding progression (Greenbank, 2010, p. 57).

The differences between part-time and fulltime students, which we have noted above with respect to FDs have also emerged as an important distinction for HNC/Ds.

Table 5 shows that the intentions of students on full-time and part-time HNC/Ds were significantly different, and these differences become more pronounced when the actual destinations of these students are considered. It would appear that these differences are associated with the extent to which many part-time students are al-

Table 5 Relationship between intentions and destinations of HN students and mode of study (Source: Ingram and Gallacher (2011))

Route	Intentions (%)		Destinations (%)	
	Full-time	Part-time	Full-time	Part-time
Employment only	23	41	30	58
Further study only	44	14	33	6
Further study and employment	33	45	28	29
Unemployed	–	–	7	5
Other	–	–	2	3
Totals	100 (N = 732)	100 (N = 140)	100 (N = 375)	100 (N = 66)

ready engaged in relevant employment, and changes in employment opportunities become important factors which influence their decisions.

The data from our HN Tracking study also enables us to consider differences which can be observed between subject areas (Table 6).

It can be seen that in some discipline areas a relatively large number of students were intending to enter *employment only*. This can be seen particularly in relation to Beauty Therapy but also with regards to Social Care and Hospitality/Travel and Tourism. In contrast, in a number of discipline areas, particularly Social Sciences and Computing, our data suggests that many of the HN students were intending to progress to *further study* and only a relatively small percentage of students in these disciplines were intending to enter or continue into *employment only* after completion of their HNC/D². Other disciplines appear to be situated between these two ends. What appears therefore to be emerging from the data provides further support for the idea of a continuum. At one end of this continuum clearly there are programmes focused on vocational preparation but at the other end vocational preparation is a much weaker objective pursued by students undertaking particular HN programmes and transition/progression into degree level study is increasingly recognized as a key objective by many of these students.

We have suggested above that an important policy objective which has emerged for these qualifications is that they should provide progression routes to bachelor degree level qualifications. Having established that a relatively high proportion of

² HN programmes in Health Care may appear to be part of this group, but the existence of a number of 'endorsed' programmes facilitates progression to level two of degree study, which is clearly part of progression towards a professional qualification.)

Table 6 Destinations of HN Completers in 2009 and 2010 by subject area of HN programme (%) (Source: Ingram and Gallacher (2011))

HN Subject Area	Employment Only	Further Study Only	Further Study and Employment	Unemployed	Other	N
Beauty Therapy	71	0	12	12	6	17
Built Environment ¹	30	27	34	9	0	64
Business	23	35	33	6	2	48
Computing	15	52	18	12	3	33
Creative Studies	24	12	56	8	0	25
Engineering	55	21	16	7	1	87
Health Care	13	51	26	0	9	53
Hospitality/Travel and Tourism	53	21	16	11	0	19
Social Care	56	13	18	8	5	39
Social Sciences	14	46	36	4	0	28
Sport and Fitness	21	17	55	7	0	29
Total	34	29	28	7	2	442

¹ Includes Quantity Surveying, Architectural Technology and Construction.

students completing these qualifications use them to progress to some form of further study, it is also of interest to consider the proportions of these students who do progress to bachelor degree level study, and the extent to which there are similarities or differences between England and Scotland.

For the FDs in England the data published by HEFCE provides a very useful overview at a national level (Table 7).

From the data included in Table 7 it can be calculated that a total of 6,160 FD qualifiers, registered in HEIs³, proceed to honours programmes, and this represents 54% of all qualifiers. It can also be noted while 59% of full-time students progress in this way, this is true for only 42% of part-time students. This is a pattern which we might expect in the light of the data on progression to further study which we have discussed above. There are no similar national data for Scotland, although the SFC

³ It has been noted above that this represents about 75% of all FD students (see Footnote 1).

Table 7 Progression to honours programmes, 2007–2008 foundation degree qualifiers (registered at HEIs) (Source: HEFCE (2010))

2007–2008 qualifiers, honours degree in 2008–2009	Full-time FD Study		Part-time FD Study	
	No of Qualifiers	%	No of Qualifiers	%
Honours programme registered at same institution	3,940	51	1,350	36
Honours programme registered at different institution	650	8	220	6
Total on honours programme	4,590	59	1,570	42
Not on honours programme	3,135	41	2,140	58
Total 2007–2008 FD Qualifiers	7,725	100	3,715	100

has published data on the total numbers of students entering any level of a degree programme with an HNC/D as their highest qualification (SFC, 2007). However these data are not linked to the numbers of students qualifying with an HNC/D award, and progression rates cannot be calculated in the way that HEFCE has done. However the HN Tracking Study shows that 44% of HNC/D completers progressed to a bachelor degree, while a further 1% indicated they had entered a postgraduate programme. A further 11% were pursuing further study at HND level. It would appear then that there is a broadly similar level of progression to university degree programmes for both FD and HNC/D students.

Conclusions

This paper has suggested that short cycle higher education qualifications which have traditionally been seen as primarily vocational in their focus, are increasingly expected to address a range of different policy objectives. These can be seen most clearly in the national policy which has shaped the development of FDs in England, but similar concerns have also emerged in Scotland. With FDs this has resulted in a situation where staff responsible for programme development have explicitly felt a need to address the agendas of vocational preparation through addressing local and regional as well as national labour market needs, to involve employers in developing and delivering programmes, and provide opportunities for work based learning for the students. But at the same time they have also had to provide clear

progression routes to honours degree programmes. This has resulted in situations where a number of staff have suggested that it is difficult to address all of these agendas in a satisfactory way and the need to prepare students for progression to the more academically focused honours programmes can conflict with the idea of having a programme where the focus is on vocational preparation. In Scotland, this interest in meeting multiple agendas has emerged more slowly and has been less explicitly articulated in policy; and many of those involved in programme development have continued to emphasise the vocational nature of these qualifications.

At the same time we have suggested that what can be observed in both England and Scotland is the impact of differences in the cultures and traditions of training in different occupational sectors. In some sectors, particularly those in which staff have to acquire nationally regulated qualifications, there is a very strong tradition of employer and/or professional body involvement in developing programmes, and providing supervised placements or integrated work based training. These programmes continue to have a very clear focus on the needs of occupational or professional roles. However in other sectors, which do not have similar traditions and cultures it is much more difficult to involve employers in the same way. While this can be seen most clearly in the case of some of the Scottish HNC/Ds, it is also true for some FDs, despite the focus of national policy.

However, despite this emphasis on skills development, patterns of student use point to a growing, and perhaps insufficiently examined, role for these qualifications in providing progression to further study. Furthermore there are important differences between full-time students and part-time students in this respect, and full-time students are more likely to use these qualifications to enable this type of progression. In addition the data from our tracking study show major differences between subject areas in this respect, and these are consistent with the differences which emerged when programme development was considered.

We would suggest that an outcome of this analysis of the roles of short cycle higher education qualifications in England and Scotland is that they should not be considered as a homogeneous group of qualifications, as tends to be the case within the current policy frameworks. In England the emphasis has been on creating multi-functional qualifications, while in Scotland, the emphasis from SQA has continued to be on the vocational nature of these qualifications. We are suggesting the utility of these qualifications can be strengthened if the differing roles of these qualifications are more clearly recognized. Some have a primary role of preparing participants for specific occupational roles, while others have a primary role of assisting transition to bachelor degree programmes, and the structure, content and approaches to learning should be shaped by these objectives in the first instance. If we differentiate more clearly between different programmes in this way the outcomes should be

programmes which are more fit for purpose. While this paper has focused on programmes in England and Scotland we have also suggested that similar issues may be emerging in other Anglophone countries, and further research around these themes in these countries could be fruitful.

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Apprenticeship: Between Theory and Practice, School and Workplace

Paul Ryan

Introduction

The term ‘apprenticeship’ covers a wide range of practice, from the extended periods of servitude and limited learning that featured prominently in early modern England to the high quality programmes of vocational development provided by many large European manufacturing firms nowadays.¹ The institutional attributes of ‘apprenticeship’ vary considerably even among high-income countries, ranging from the transparency of the ‘coordinated’ Germanic systems to the opacity of the market-oriented English and Italian systems (Ryan et al., 2011; Snell, 1985, ch. 5; Wolter and Ryan, 2011).

One way of assimilating this variety of practice is to consider specific attributes of apprenticeship. Several taxonomies have been proposed for the analysis of cross-national differences in systems of vocational education and training, focusing on such attributes as the role of employers, social partnership, employment relations, education systems and the state (e.g. Busemeyer, 2009a; Greinert, 1994; Steedman, 2010; Rauner, 2010). Although normative concerns often inform such analyses, the frameworks proposed are usually conceived in positive terms, i. e., as organising the evidence and analysing causality, but not as determining merit.

¹ I would like to thank Matthias Pilz, Uschi Backes-Gellner, Simone Beer, Reinhard Bispinck, Marius Busemeyer, Thomas Deissinger, Philipp Gonon, Ewart Keep, Eva Kuda, David Paulson, Lisa Rustico, Peter Senker, Silvia Teuber, Michele Tirabsochi, Karin Wagner, Felix Wenzelmann, and participants in the Cologne conference for comments, suggestions and other assistance.

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This paper's approach, by contrast, is one-dimensional and normative. Apprenticeship practice is examined in the light of a specific dualist ideal: the synthesis of theory and practice, on the one hand, and of the classroom and the workplace, on the other. The ideal was advocated by educationists, notably Kerschensteiner, who favoured apprenticeship as a mode of education, technical and even general, instead of simply vocational training and practical learning. It suggests the desirability for apprentices of a status that shares particular features with those of the full-time student and the regular employee, while being at the same time clearly separated from both.

The first question suggested by such an ideal is: to what extent is it realised in practice? The issue is examined here in terms of particular attributes of apprenticeship systems: the contractual status of apprentices, their right to participate in industrial conflict, how their income is determined and the level of their pay. These four attributes are selected partly out of interest and partly because of their neglect in institutionalist writing on apprenticeship. The evidence concerns primarily post-war Britain and Germany, supplemented selectively by Italy and Switzerland.

The realisation of the ideal in terms of those four attributes proves imperfect and unstable in practice. The status of the apprentice is not always distinct from both the full-time student and the regular employee, and it has varied substantially over time, particularly in Britain and Italy, but even in the relatively settled German and Swiss systems. The second question is therefore: what determines the gap between the ideal and the real, and the mutability of the gap? That question is only touched on here, with a suggestion that the answer lies partly in the transitional position of apprenticeship within the individual's life cycle, partly in the economics of training, and partly in the goals and power of the interested parties: employers, trade unions, politicians, public officials and vocational teachers.

The paper is exploratory rather than definitive, relying more on inter-disciplinary speculation than on intra-disciplinary rigour. If it encourages further research on aspects that tend to be neglected in cross-national comparisons, any holes left unfilled or mistakes made will hopefully be excused.

Apprenticeship: Meaning

What is meant by 'apprenticeship'? It denoted traditionally the attachment of a young person to an employer for a period of years, in which labour services are exchanged for the opportunity to learn a skilled occupation (Snell, 1996). Nowadays, in transalpine continental Europe at least, apprenticeship also involves formal

education. A broad definition, consistent with the ideal postulated above, might be that apprenticeship denotes programmes of learning that combine part-time formal education with training and experience at the workplace, and result in an externally recognised vocational qualification.²

The key attribute is then the blending, within an integrated occupationally-oriented programme, of theory and practice, and thus of technical knowledge and practical skill. In parallel with this pedagogical duality runs a locational one, juxtaposing the classroom and the workplace. In a simple account, technical knowledge is developed in the classroom, practical skill in the workplace. Such syntheses represent this paper's 'apprenticeship ideal'.

The blending of these components distinguishes apprenticeship from other types of vocational learning – on the one hand, from full-time vocational schooling, which typically lacks any workplace-based component more substantial than short spells of work experience, and, on the other hand, from on-the-job training and labour market training programmes, which typically lack an abstract, classroom-based component.

The difference between apprenticeship and the other forms of learning is a matter of degree rather than kind. Some full-time vocational programmes involve work experience; some on-the-job training programmes involve off-the-job learning, some of which may be construed as educational. Lines must therefore be drawn between what is and is not taken to be 'apprenticeship'. Demarcation is required in two dimensions: first, between apprenticeship and on-the-job training and labour market programmes, in terms of the amount and content of their off-the-job learning component; second, between, apprenticeship and vocational education proper, in terms of the amount of work experience and work-based training.

The first issue poses more problems than does the second one. Whereas in Germany apprenticeship can be clearly distinguished from other forms of vocational training, the same does not apply to 'apprenticeship', as the term is widely used in Britain nowadays, nor to 'apprendistato' in Italy.

In England,³ while some of the learning that is nowadays supported by the Apprenticeships programme, such as craft training in engineering, combines part-time vocational education with work-based training, and thus satisfies the defini-

² Similar definitions are used by Steedman et al. (1998, p. 11) and Wolter and Ryan (2011, pp. 522 et seq.).

³ The categories 'Britain' and 'England' are here used as broad substitutes. The devolution of training responsibilities and the ensuing divergence of training practices in Scotland and Northern Ireland from those in England and Wales during the past decade means however that the developments described here for that period may strictly speaking apply only to England and Wales (here, 'England').

tion, much does not. This is because training standards vary greatly by occupation and sector, according to the decisions of individual Sector Skills Councils, and the 'frameworks' that those Councils have adopted for the service occupations, including those in business administration, retailing, customer service, and childcare, require little off-the-job learning and no formal education. 'Apprenticeship' has in effect come to denote in contemporary England any publicly-funded programmes of work-based learning that satisfy the (frequently undemanding) requirements for public subsidy, however limited its educational content. It is therefore important to distinguish apprenticeship, i.e., the functional category defined above, from Apprenticeship, i.e., the programme organised and funded by government. In such a situation, the use of the term 'apprenticeship' is often confusing, cosmetic and objectionable (Ryan et al., 2006, 2007; Wolf, 2011).⁴

Similar problems arise in Italy. The legal reforms of 2003, which also sought to distinguish apprenticeship from labour market programmes, recognised three forms of apprenticeship: 'right and duty' (*dritto dovere*), organised as part of upper-secondary education; 'occupational' (*apprendistato professionalizzante*), geared to particular employers' needs; and 'higher' (*alta formazione*), at post-secondary level. The first and the third of these streams must contain part-time vocational education, nor just work-based training and, as such, fall under our definition of apprenticeship. The second stream typically involves no requirement for (as opposed to not ruling out) part-time vocational education, so most of it falls outside our definition – and it is by far the largest, accounting in 2009 for 72% of all 'apprentices'. As in England, so also in Italy: many 'apprentices' do not undertake what can validly be termed an apprenticeship (ISFOL, 2010, p. 7; Rustico, 2011, Table 1; Tiraboschi, 2006).⁵

⁴ Participants in the Apprenticeships programme must spend a minimum amount of their time away from their immediate job station, undertaking Guided Learning Hours. The minimum number of Hours is currently being increased, from 90 in 2004 to 280 (per year of training). The requirement can be met through part-time vocational education, but that is not required, as supervised study, self-instruction and even assessors' time can be counted toward it. No data are available on the share of Apprentices who receive part-time vocational education at a further education college (BIS, 2009; Ryan et al. 2006, Table 1).

⁵ The second difficulty – distinguishing between apprenticeship and school-based vocational education – can be illustrated by OECD's criterion for classifying programmes of vocational education as 'combined school and work-based' (and potentially therefore as 'apprenticeship'): that at least 25% of the learner's time be spent at the workplace. Programmes that are heavily classroom-based, with as little as one day per week spent at a workplace – such as work experience placements – are included. The difficulty causes limited concern, however, as such programmes appear to be rare, and typically aimed at lower secondary pupils (OECD, 2008, p. 325; Wolter and Ryan, 2011).

The second difficulty – distinguishing between apprenticeship and school-based vocational education – can be illustrated by the OECD's criterion for classifying programmes of vocational education as 'combined school and work-based' (and potentially therefore as apprenticeship): that at least 25% of the learner's time be spent at the workplace. Programmes that are essentially classroom-based, with as little as one day per week spent at a workplace – such as upper secondary schooling with work experience components – are included. The difficulty causes limited concern, however, as such programmes appear to be rare and, where present, often aimed at lower secondary pupils (OECD, 2008, p. 325; Wolter and Ryan, 2011).

Apprenticeship: Merits and Limitations

From one viewpoint, the definition of apprenticeship is a secondary issue. From another viewpoint, it matters greatly for the social and economic case for apprenticeship: the more inclusive the definition, the weaker the advantages of apprenticeship relative to the drawbacks. This section considers the net advantages of apprenticeship.

Three dimensions may be distinguished: pedagogy, skill content and the school-to-work transition. First, compared to full-time schooling in general, and academically oriented curricula in particular, the 'situated learning' that characterises apprenticeship is for some learners both more motivating and easier to undertake than the less situated learning that characterises classroom-based programmes. The motivational and cognitive benefits are both visible in a comment by a female apprentice, engaged in a programme organised by a British car producer:

'... now I'm here [at the workplace] I love doing the maths because it's career related. Why can't they teach car-related maths at school? It would be much better: you could understand it and see what it all means' (Unwin and Wellington, 2001, p. 37).

The benefits of 'learning through occupations', as opposed to crude 'learning for occupations', were argued powerfully in such terms a century ago by Kerschensteiner and Dewey, in Germany and the US respectively (Gonon, 2009; Grubb, 1995; Winch, 2006).⁶

Second, compared to full-time, school-based programmes, the skills produced by apprenticeship benefit from the closeness of learning to production. Learners

⁶ A further indirect benefit of apprenticeship for learning is the incentive to pupils in lower secondary schooling to learn more, in order to improve their chances of admission to a desirable apprenticeship programme (Soskice, 1994).

are exposed to both the production methods and the work requirements of actual – and normally economically viable – workplaces, rather than to classroom substitutes, whether simulated or imagined (Streeck, 1989). Thus the competitive success of large manufacturing firms, which are present to a varying extent in all four countries considered here, means that their apprentices learn to use state-of-the-art equipment and techniques. By contrast, traditional ‘voc ed’ in the US was hampered by the often outdated equipment and the absence of production conditions in classroom settings (Grubb, 1995).

Third, apprenticeship is associated with better school-to-work transitions. This shows up at different levels: nationally, in the inverse association between the size and quality of countries’ apprenticeship systems and their youth unemployment rates (relative to adult rates, at least); and individually, in the positive association between having taken an apprenticeship and outcomes – both pay and employment – in early labour market experience. The mechanisms that link apprenticeship to economic outcomes for young people appear to reflect, in addition to the pedagogical and skill effects cited above, the acquisition of superior information and contacts in the labour market (Ryan, 2001a).

Such advantages help explain, and potentially validate, the growth of policy interest in apprenticeship in advanced economies since the emergence of structurally high youth unemployment in the 1970’s and the intensification of international competition in the 1980’s (Christopoulou and Ryan, 2009).

There is however another side to the story: the limitations of apprenticeship. They represent the opposite side of the coin in each of the three categories of benefit. First, the pedagogical benefits of apprenticeship are selective: some learners, particularly those with a theoretical bent, learn more willingly and more effectively when facing non-situated, abstract learning. For others, a situated approach to learning makes no difference. The size of those groups is not known, though assumptions about it are typically implicit in government policies toward the expansion of higher education. In any case the existence of those groups is not in doubt (Rauner, 2012).

Second, not all apprenticeships involve great learning opportunities in the first place. Employers may provide apprenticeships as a source not so much of future skills (‘investment-oriented training’) as of low-cost production labour in the present (‘production-oriented training’) (Mohrenweiser and Backes-Gellner, 2010; Mohrenweiser and Zwick, 2009; Wolter and Ryan, 2011). Learning content is then limited, and the closeness of apprenticeship to production can become a drawback rather than an advantage. Apprenticeship may be experienced as exploitative (‘cheap labour’). Such views were widely held among labour-oriented commentators in Britain in the last century, and in West Germany in the immediate

post-war period (Gollan, 1937; Taylor, 1981). Indeed, such criticisms encouraged the near-total discarding in Sweden by the early 1970's of apprenticeship in favour of full-time vocational schooling (Nilsson, 2008). They remain relevant nowadays when externally specified training standards are absent, or set low, or not enforced, as in many developing countries, and in much of English and Italian 'apprenticeship' (Ryan and Unwin, 2001; Tiraboschi, 2006).

A further limitation of apprenticeship as a source of skills is the difficulty in practice of fusing theory and practice into a coherent whole. Complaints about weak articulation between the vocational college (*Berufsschule*) and the workplace have been endemic to German apprenticeship. Teachers in vocational colleges are often criticised for an overly academic approach, and for disdaining the practical, workplace-based components of apprentices' learning. Some employers are criticised in turn for showing little interest in the technical education that their apprentices receive. The two sides typically do not cooperate effectively, if at all, to coordinate apprentices' learning. Dealing with these problems remains an important policy challenge for German apprenticeship (Achtenhagen and Grubb, 2001, pp. 615 et. seq.; BIBB, 2011; Euler, 2003; Hoeckel and Schwartz, 2010, pp. 40 et seqq.).

Finally, problems occur also in school-to-work transitions. In the first place, the benefits of apprenticeship to individual participants, as compared to those of full-time vocational schooling, tend to be limited to higher employment probabilities in the first decade of labour market experience – i.e., they typically do not involve the life-long gains in employment rates and pay associated with taking additional years of full-time schooling (Ryan, 2001a, sec. 7.2).

Second, apprenticeship is cyclically vulnerable, in two respects. Viewed in terms of youth opportunities, it is affected by the business cycle: in economic downturns, employers reduce their intakes of apprentices. Viewed in terms of employers' ability to attract youth, demographic fluctuations (baby booms and busts) affect the supply of young people available for training – even if the same fluctuations would affect the school system in the absence of apprenticeship (Brunello, 2009; Muehlemann et al., 2009). Given these two sources of fluctuation, the policy appeal of apprenticeship must therefore be sought instead in its longer-term, structural contribution to education, skills and productivity, rather than in any reduction of conjunctural difficulties.

Apprenticeship: Ideal and Real

The ideal of blending theory and practice, on the one hand, and the college and the workplace, on the other, suggests that an apprenticeship system should combine attributes from both sides of those dualities without adhering exclusively to either. The apprentice should share particular attributes with the student and the employee, but be clearly distinguished from each.

The ideal is reflected in the term 'Dual System' (*duale Ausbildung*) that is used to characterise apprenticeship in Germany. The term expresses the 'system of cooperation between the firm and vocational school in initial training...' (Münch 1991, p. 37). Although part-time education for teenagers goes back to the continuation schools of the late nineteenth century, the label itself was introduced only in the 1960's, in the run up to the 1969 Vocational Training Act, with its insistence on the sharing of responsibility for apprenticeship by vocational colleges and employers (Busemeyer, 2009b; Deissinger, 1996).⁷

This section considers the extent to which the dualist ideal is realised in practice, in terms of four attributes: contractual standing, participation in industrial disputes, pay setting, and pay outcomes. These attributes are selected partly by way of illustration, but also because although they are important, they are rarely discussed in the institutionalist literature.

Other, potentially relevant attributes that are not considered here include: the allocation of apprentices' time between the college and the workplace; the right and liability to work overtime; holiday entitlements; liability to income tax and social security contributions; age at entry; retention by the training firm at the end of training; and the opportunity to continue formal education after training. A full treatment would include these aspects.

The division of apprentices' time between the vocational college and the workplace stands so close to this paper's ideal that its exclusion requires justification. The attribute is in one sense straightforward. In continental transalpine Europe, apprentices must spend at least one-sixth, and typically one fifth, of their time in part-time courses at vocational colleges (i.e., in formal schooling, away from the

⁷ The dual ideal is diluted in practice by the growth of co-operative training, which sees groups of employers, typically small and medium-sized ones, contract to provide the off-the-job component of training, in whole or part. Such arrangements are particularly widespread in engineering in Switzerland and Britain (Gospel and Foreman, 2006; Muehleman et al., 2007, ch. 10). Dilution comes close to destruction in the more extreme situation, widespread in England's Apprenticeships programme, in which a specialist training company takes overall responsibility for the training programme (Lewis and Ryan, 2009).

workplace; Ryan, 2000, Table 3).⁸ In Britain, by contrast, while that is still required in traditional craft occupations, notably in metalworking, most Apprenticeships in service occupations involve little or no vocational education (Ullman and Deakin, 2005). The difference between Britain and the other countries may be clear but its merits are contested. The advocates of competence-based assessment, as practised in modern Britain, commonly assert that the blending of college and workplace is not important for learning, and that a purely workplace-based programme can be optimal.⁹ Proper consideration of this controversy would require a more extended discussion than is possible here.¹⁰

Particular Attributes of Apprenticeship

Four attributes are considered here: the contractual standing of apprentices, their rights in relation to industrial disputes, how their pay is determined, and how highly they are paid.

Contractual Standing

Employer-based training may function under a training contract, an employment contract, or both. The apprenticeship ideal suggests: first, that the apprenticeship contract be clearly distinct from the employment contract, with the apprenticeship contract spelling out formally the training-related rights and duties of the apprentice and the employer, while the employment contract does the same for the service-related rights and duties of the employee and the employer; and, second, that apprentices should hold a training contract only.

⁸ Some large German employers, including retail firms, are allowed nowadays to satisfy the requirement for part-time vocational education with facilities of their own rather than Berufsschulen.

⁹ 'Thus the peak employers' association holds that 'for some sectors and firms – notably the 'traditional' apprenticeship sectors such as engineering – a significant part of the apprentices' training will take place off-the-job. But for others, most training will be more effectively undertaken on-the-job... learning currently takes place in a variety of ways and locations... the workplace is a different learning environment from the classroom... more must be done to ensure the programme meets business needs' (CBI, 2009, p. 2). Such views, in treating the classroom and the workplace as antithetical rather than complementary sources of learning, clearly reject the ideal that governs this paper.

¹⁰ Discussions of the issues surrounding 'competence' include Wolf (1995) and Winterton (2009).

Such a situation was approximated in post-war West Germany, where the apprentice held a formal training contract, which spelled out the training-related rights and duties of both parties, but not an employment contract. The situation prevailed until the 1969 Vocational Training Act. In the discussions preceding that legislation, the Social Democratic Party (SPD) called for apprentices to hold the status of employee, not just trainee. The proposal was rejected by employers' representatives, who feared that it would lead to increases in apprentice pay and thus in their training costs (Taylor, 1981, p. 207). The Act itself, however, opened the door to the employment contract for apprentices, in stipulating that, unless explicitly stated otherwise, the legal principles of the employment contract were to apply to the apprentice contract (Bundesregierung, 1969, p. 1112, §3(2)). Not surprisingly, by 1972 federal law formally classed apprenticeship as a form of employment (BMJ, 2001). Nowadays, in both Germany and Switzerland, unless otherwise explicitly stated, apprentices have the status of an employee, not just that of a trainee (Berenstein and Mahon, 2001, § 175-8; Betriebsfassungsgesetz, §5, (1); Obligationenrecht, Art. 344-6; Wettstein and Gonon, 2009, p. 99).

In England, formal training contracts for apprentices go back to (and beyond) the formal indentures required by the Statute of Artificers of 1563 (Lane, 1996). The deregulation of apprenticeship in 1814 had led by the 1920's to the holding by most apprentices, in metalworking at least, of only a verbal apprenticeship agreement (Ryan, 1999, p. 42). The distinction in law between the contract of apprenticeship and the contract of 'service' (i.e., employment) continued to erode, so that by the 1970's legal experts saw the apprenticeship contract as constituting at law simply another form of employment contract, distinguished primarily by its fixed duration and training-related requirements (Hepple and O'Higgins, 1981, ch. 12).

The long-term convergence between contracts of apprenticeship and employment under English common law reflected the efforts of employers to shed three traditional obligations to their apprentices: first, to replace formal indentures by verbal agreements; second, to specialise apprentices on particular job tasks rather than to teach them 'the trade'; and third, to be able to lay them off rather than to retain them during economic downswings. Apprentices (and trade unions, on their behalf) reacted to being treated increasingly like regular employees by claiming trade union representation and collective bargaining coverage (Ryan, 1999).

Recent decades have been dominated by public training programmes, with all their ambiguities concerning the status of participants. The British government has recently legislated to clarify the contractual position. The 2009 Apprenticeships Act actually states that the Apprenticeship agreement, which must be provided to all Apprentices, constitutes a contract of employment, and not a contract of apprentice-

ship!¹¹ The Act therefore separates Apprentices contractually from apprenticeship while firmly locating them in employment.

This apparently extraordinary development might be interpreted as evidence of the death in England of the apprenticeship ideal. Alternatively, given the secular convergence between the legal status of contracts of apprenticeship and employment, its separation of the Apprenticeship agreement and the employment contract, on the one hand, from the apprenticeship contract, on the other, might be thought unimportant. The presumptive reason for separating them is however revealing: to remove from an employer who lays off an Apprentice during his or her training programme the liability to provide more than the standard compensation due to a laid off employee, as would otherwise be required under an apprenticeship contract.¹² The Act thereby completes the convergence of the status of the Apprentice on that of the employee – while recognising ironically what little remains of the difference between those of the apprentice and the employee.¹³

The convergence of the Apprenticeship agreement on the employment contract reflects two factors that have encouraged successive British Governments to promote, and eventually to require, ‘employee status’ for participants in the Apprenticeships programme. The first is historical: to distance the programme from its immediate predecessor, the Youth Training Scheme, in which ‘trainee status’ with-

¹¹ ‘... an [Apprenticeship] agreement is not to be treated, for common law or statutory purposes, as being a contract of apprenticeship (as recognised at common law) but is instead to be treated as being a contract of service [i.e., employment]’ (Parliament, 2009, Part 1, Ch. 1, Section 35, #71). An exception to the requirement that Apprentices hold an employment contract has already been made, however, for athletes in training for the 2012 Olympic Games, who are publicly supported by the Apprenticeships programme despite not being trained by an employer (<http://nds.coi.gov.uk/content/Detail.aspx?ReleaseID=416250&NewsAreaID=2>; accessed 7 July 2011).

¹² In *Flett v. Matheson* (2006), the Court of Appeal decided that a participant in the (Modern) Apprenticeships programme could validly claim the contractual status of apprentice under common law, and as such, if laid off during the training period, be entitled to compensation from the employer not only for loss of pay during the remainder of the period, but also for loss of future earning power as a result of not being fully trained (Bowers, 2009, pp. 240 et seq.; Indicator, 2007, pp. 5 et seq.). The 2009 Act bars such claims by denying to Apprentices the status of apprentice under common law. The motive for the change in contractual status is indicated by the official statement that accompanied the draft legislation: ‘... we will ensure that the system is sufficiently flexible not to place additional burdens on employers other than a requirement to enter into an apprenticeship [sic] agreement’ (DCSF/DIUS, 2008, p. 2).

¹³ The 2009 Act also indicates the dominance of (narrowly conceived) employers’ interests in the organisation of Apprenticeships: the principle that the apprentice’s right to complete training should have priority has been trumped by expediency, as represented by the government’s efforts to increase participation by employers.

out employment rights was associated with low pay (the publicly funded training allowance), low training quality and the exploitation of youth labour (Lee et al., 1990). The second is structural: to respond to the dominance of specialist training providers among prime contractors for Apprenticeships programmes, by strengthening the links between the Apprentice and the employer (Ryan and Unwin, 2001; MAAC, 2001; Lewis and Ryan, 2009, Table 1).¹⁴

The convergence between contracts of apprenticeship and contracts of employment in both Germany and Britain suggests at the minimum some weakening in the implementation of the apprenticeship ideal. Its significance is however reduced by the form it has taken: in both countries, the status of employee accompanies the training contract, rather being embodied in a separate employment contract.¹⁵ Moreover, the employment contract is, broadly speaking, nested within the apprenticeship contract, which itself constitutes an elaborate type of fixed-term employment contract.¹⁶ Both contracts stipulate the same basic conditions (hours of work, holiday entitlements, probationary period, disciplinary procedures, etc.) but the training contract extends beyond the employment contract, by including the reciprocal rights and duties stipulated by public training law – including for German employers the duty to employ qualified training staff (Deakin and Morris, 2009, pp. 144–46).¹⁷

Contractual convergence is therefore more symbolic than substantial. The symbolic is not however unimportant. England's explicit identification of the Apprenticeship agreement as an employment contract rather than an apprenticeship con-

¹⁴ DIUS/DCSF (2009). The importance of employee status in the Apprenticeships programme has been increased also by the rise in the number of entrants who are already employed by the relevant employer on joining the programme – a tendency currently being intensified by the conversion of funding and participation from other adult training programmes (notably Train to Gain) to the Apprenticeships programme (Fuller and Unwin, 2011).

¹⁵ 'Das Ausbildungsverhältnis ist kein Arbeitsverhältnis. Auf den Berufsausbildungsvertrag sind aber arbeitsrechtliche Rechtsvorschriften und Rechtsgrundsätze anwendbar...' (Kull and Bitmann, 2006, p. 1; see also Weiss and Schmidt 2008, § 139). For Switzerland, however, Berenstein and Mahon (2001, § 175-76) assert the continuing importance of the distinction between contracts of employment and apprenticeship.

¹⁶ In Italy, apprenticeship does not, in some interpretations, even constitute a fixed-term contract, as the standard legal restrictions on dismissal apply to it, making it *de facto* permanent (Tiraboschi, 2011; Varesi 2001, p. 154).

¹⁷ The nesting of an employment contract within the apprenticeship contract is not exact. For example, in Britain, until the 2009 legislation, it was harder for an employer to lay off, before the expiration of a fixed-term contract, an Apprentice than an employee (Green, 2011). Similarly, in Germany the employer is required by law not to require apprentices to do work that is not part of the occupation they are learning, in contrast to the discretion the employer enjoys over the duties of regular employees (Deissinger, 1996).

tract aligns with the dominance in the Apprenticeships programme of the workplace and job training, and the marginality of the vocational college and technical education.

Right to Strike

A second, contractually related, attribute is apprentices' rights to participate in industrial disputes. Two aspects are relevant: first, whether apprentices are free to take industrial action on their own, i.e., separate from that organised by a trade union; second, whether apprentices may participate in wider industrial disputes with their employer, as members of the trade union(s) involved. Apprentices who possess either right may be viewed as closer in status to the employee than to the full-time student. The discussion of these issues is confined for reasons of space to Germany and Britain.

On the first issue, apprentices have no legal right to take independent industrial action in either Britain or Germany. German apprentices are contractually required to lodge complaints about their training programmes with the relevant conciliation committee (*Schlichtungsausschuss*), which is part of the local Chamber's training functions, without any right to strike independently over such matters (BIBB, 2005, §9; Deissinger, 1996).¹⁸ A further channel for the expression of discontent is provided in large companies by the Youth and Apprentice Council, a representative body that apprentices and young employees are under co-determination law entitled to elect (W.A.F. Institut für Betriebsräte – Fortbildung AG, n. d.).¹⁹

In Britain, the separation of employment relations from legal regulation traditionally made any formal right to strike an irrelevancy – which facilitated the launching by apprentices during the last century of several unofficial strike movements in pursuit of their particular interests (Ryan, 2004, 2010). The legal restrictions placed since 1980 on the right to strike of employees in general mean however that English apprentices can no longer legally launch strikes of their own without the formal support of their trade unions – in which respect their position has become the same as that of regular employees (Brown et al., 1997).

The right of apprentices to strike on their own has in any case become a peripheral issue. More important is whether apprentices may join wider industrial

¹⁸ That did not prevent apprentices from taking unofficial industrial action during the upheavals of the early 1970's (Andresen, 2009, 2010).

¹⁹ Youth Councils can be set up only on the initiative of the relevant employer, works council or trade union. Where present, the Councils narrow further the distinction between apprenticeship and employment, in that their apprentice members are in practice guaranteed to continue to skilled employment in the firm after completing training.

disputes, alongside regular employees. The apprenticeship ideal might suggest that apprentices should be excluded from such disputes, consistent with their status as learners rather than workers. Yet historically both employers and unions have sought the allegiance of apprentices during industrial disputes: employers, to reduce the effect of a strike on production by using apprentice labour; unions, to increase pressure on the employer, by withdrawing apprentices from the workplace.

The tension has played out differently across time and place. In British engineering, the allegiance of apprentices in industrial disputes proved a long-standing bone of contention between trade unionists and employers in the engineering industry. In the protracted lockout of 1922, the two sides strove for the allegiance of apprentices, one-third of whom struck in support of the unions' cause, while the remainder remained at work. The issue was eventually resolved in 1965 by a sector-wide procedure agreement that bound the union to exclude apprentice members from all industrial disputes, in that any apprentice who joined a strike would be disciplined by his or her union, while binding the employer not to use apprentices to do the work of strikers (Ryan, 1999, pp. 46, 50 et seq.). This agreement, in formally disarming apprenticeship after repeated hostilities, harmonised exceptionally with the apprenticeship ideal.²⁰

In West Germany, the demand for a right to strike for apprentices was contested during the post-war decades. Apprentices' representatives in the metalworking trade union pushed for it repeatedly, encountering strong resistance from employers (e.g., IG Metall, 1971, *Antrag Nr. 34*, p. 356). The issue was eventually resolved by a 1984 decision by the Federal Labour Court, which recognised the right of apprentices to take part in official industrial disputes, or at least in warning strikes and short strikes, as long as apprentices' own terms and conditions – e.g., their pay or their retention by the company after training – were among the issues at stake (Weiss and Schmidt, 2008, § 508). To that extent, and in contrast to the position attained in British metalworking in the 1960's, another aspect of the separation between apprentices and employees was weakened.

Elements of the ideal were however preserved in the 1984 ruling, which imposed specific limitations on the right of apprentices to strike. They are, first, that apprentices may not strike in the time scheduled for their attendance at vocational college (typically a particular day every week) and, second, that participation must not interfere with the final assessment of third and fourth year apprentices. Moreover, the

²⁰ The agreement coincided broadly with the launch of the Engineering Industry Training Board, with its mandate to raise training standards (Senker, 1991). Whether the agreement meant that apprentices stood apart from the strike wave of the ensuing decade has not been established, but that appears unlikely

decision on apprentices' participation belongs in practice to the union's local strike committee, not to the apprentices themselves. Even so, the issue remains contested. The two largest German unions both claim that some employers still tell their apprentices that they have no right to strike (Bundesarbeitsgericht vom 12.09.84, AP Nr. 81, cited by IG Metall, 2006 and Verdi, 2006; Wien, 2009, p. 173; von Bröckel, 2010).²¹

Payment Systems

Two aspects are considered here: first, whether the apprentice receives from the employer a wage (or salary) or a training allowance; second, whether the apprentice is eligible for bonus pay based on his or her performance at the workplace. The apprentice who is paid a wage rather than an allowance and whose pay depends on work-based performance stands closer to the employee than does one who receives only a flat-rate allowance.

The distinction between apprenticeship and employment is underlined in Germany by the different terms used to denote pay for the two categories. Apprentices are paid an allowance (*Vergütung*); employees, a wage or salary (*Lohn, Gehalt*). Switzerland sees a similar distinction, but with a less marked difference in terminology, as apprentices' pay is termed the 'apprentice wage' (*Lehrlingslohn*). In both countries, the difference in status between the apprentice and the regular employee is underlined by the terminology.

The distinction between apprentices and employees was constrained in post-war West Germany by their having the same mode of pay setting: collective bargaining (*Tarif*) at sector-region level. Nevertheless, some aspects of pay bargaining for apprentices remained different from those for employees. First, apprentices' allowances were set in separate collective agreements from those that fixed employees' wages, so that increases in employees' wages were not always accompanied by increases in apprentices' allowances.²² Second, the collective agreements for apprentices stipulated, as subsequently required by the 1969 Act, a monthly rate, in contrast to the hourly ones set for manual employees – which points to the dif-

²¹ Thus when the services trade union Verdi called out 450 apprentices, alongside 700 employees, for a second warning strike in April 2011 against a non-union health clinic in Leipzig in pursuit of collective bargaining coverage, the clinic's managers reportedly told the apprentices that they had no right to strike, and only 100 apprentices participated, some of them only during the lunch break (<http://jugend.verdi.de/news/zeichen-stehen-auf-streik>; accessed 18 July 2011).

²² In Hesse (e.g., IGM, 1954), apprentice allowances remained unchanged in five post-war years that saw an increase in employees' wages (1951-1953, 1956, 1958).

ference in the working hours expected of the two categories.²³ Third, apprentice allowances were – and still are – set as fixed sums of money, not percentages of the base rates of skilled employees, as became the practice in post-war British engineering, with its weaker distinction between apprenticeship and employment. In all of these details, German practice supported a stronger distinction.

Some erosion occurred in the first attribute. From the 1960's on, apprentice allowances came increasingly to be set in the same negotiations and included in the same collective agreement as employees' wages and salaries, thereby ensuring that apprentices were routinely covered by general pay increases. Practice and timing varied by region and sector. For example, in metalworking, the two agreements were unified as from 1963 in Bavaria, whereas in Hesse they remained separate through the 1970's – albeit by then with identical dates indicating their joint negotiation within a single pay round.²⁴

Switzerland had retained a sharper distinction between the setting of apprentices' pay and that of employees' wages. If the coverage of collective bargaining for employees is low, it is negligible for apprentices, whose pay is in effect left to individual employers to decide. The result is a firmer separation of apprentices from regular employees. Employers not only typically exclude apprentices from regular pay increases for employees, but in some cases even keep their allowances unchanged for a few years at a time. The extent to which pay setting for Swiss apprentices reflects market clearing, inertia, or employer power remains to be determined (Muehle-*mann et al.*, 2011; *Ryan et al.*, 2010, 2011).

By contrast, British apprentices have traditionally been paid a 'wage' (or salary), just like a regular employee, and, by way of the scale rates that have since the 1960's set their pay as a percentage of skilled pay, they have shared in general wage rounds for employees.²⁵ The requirement of employee status for Apprentices, associated with the abolition of 'programme-led' Apprenticeships, in which a specialist training provider subsumes completely the employer's role, means that all Apprentices must now be paid a wage, and none simply a training allowance. Although much

²³ Protective legislation also came to rule out the working of overtime by apprentices aged less than 18 years (BMJ, 1976, §8(1)).

²⁴ The convergence of pay setting for apprentices and regular employees in post-war Germany increased the scope for German trade unions legally to call out apprentices in industrial disputes, as the issues involved in general *Tarif* negotiations became more prone to affect apprentices as well as employees.

²⁵ Percentage scale rates for engineering apprentices go back at least to the interwar period, when local employers' associations used them to set maximum rates of pay. Unionisation led in the 1930's to their conversion to minimum rates, but their importance was weakened temporarily by the use of flat-rate wage increases in 1952 and 1960 (*Ryan*, 2004).

of the training supported by the Apprenticeships programme hardly constitutes apprenticeship, as defined above, the elimination of 'non-waged' variants as from 2011 will contribute further to the convergence of Apprentice and employee status (NAS, 2011).

The second issue concerning payment systems is whether, in companies that pay their employees performance-related bonuses, apprentices also receive bonus pay. Insofar as it is their position as learner that is the priority, not that as producer, according to the apprenticeship ideal apprentices should not receive bonuses for production-related performance at the workplace. This is because incentive pay encourages both the employer and the apprentice to restrict training to specialised work tasks, in which high output and earnings can be obtained.

In post-war Britain, incentive bonuses were paid to many metalworking apprentices: in 1960, to 47% in engineering and 76% in shipbuilding (Ryan, 2004, Table 4; Ryan, 2010, p. 341). A recurrent demand by apprentices' representatives was the removal of apprentices from bonus schemes, in order to discourage task specialisation during training.²⁶ The share of apprentices who received performance bonuses declined strongly after 1964, in association with the raising of training standards by the Engineering Industry Training Board (EITB), but not to zero. The EITB may well have disfavoured bonus pay as inimical to training quality, but it appears not to have made eligibility for its training grants depend on the reduction of piece-working by apprentices.²⁷

In post-war Germany, the employment of apprentices on piecework was ruled out by the 1976 Youth Labour Protection Act. The underpinning thereby provided to the distinction between apprenticeship and employment was however limited: the legislation applied to employees as well as to apprentices, and it was confined to the under-18s (BMJ, 2008, §23 (*Akkordarbeit, tempoabhängige Arbeiten*)). The latter has meant a decline in the Act's relevance to the status of the apprentice, associated with the secular rise in the median age of entry to apprenticeship, which reached 19.4 years in 2007 (Ryan et al. 2010, Table 10).²⁸

²⁶ Motions calling for the abolition of bonus pay for apprentices featured on the agendas of nine of the nineteen Youth Conferences held by the largest engineering union between 1946 and 1964. The motions encountered regular opposition because of the interest of piece-working apprentices in raising their earnings during training, but they failed to carry only in 1949 and 1950 (AEU, 1950).

²⁷ No record of EITB practice remains available, but the principal historian of the Board, Peter Senker, recalls in a personal communication no evidence of any such policy.

²⁸ An assumption that apprentices (and skilled employees) receive no bonus pay has been applied in all the surveys of employers' training costs that the Federal Vocational Training Institute

Table 1 Incidence of performance-related pay for apprentices in matched establishments in two sectors and three countries (Source: Ryan et al. (2010, Table 5))

Individual	Group	Companies paying bonuses to any apprentices				Performance criteria used (individual bonuses only)			Number of companies	
		Both	Either	School only	Workplace only ^b	Both				
Engineering	GB ^c	1	5	1	5	0	0	1	9	
DE		2	4	2	5	0	1	1	8	
CH		6	4	4	6	0	1	5	8	
Retailing ^a	DE	2	3	0	5	0	0	2	0	10
CH		4	2	0	6	0	5	0	10	
Both	All	18	22	9	32	0	12	7	45	

a. British retailing is excluded, as no Apprentices were present in the relevant establishments.

b. Includes commission pay in retailing.

c. Participants in the Apprenticeships programme (Level 3)

Nowadays, in Britain, Germany and Switzerland alike, some, and possibly many, apprentices receive performance-based payments. A recent study of 45 matched establishments in two sectors (engineering, retailing) in Britain, Germany and Switzerland found that slightly more than half of them paid their apprentices some kind of performance bonus, and that there appears to be little variation in its incidence by country or sector (Table 1).²⁹

In some of these companies, the use of incentive pay for apprentices reflects simply their passive inclusion in group bonus schemes for employees in the department or plant in which they work – as notably with commission pay in retailing. Yet even that practice implies an underlying similarity in the perceived positions of apprentices and employees. More striking still, one-third of the employers (15 out of 45),

(BIBB) has conducted since the 1970's, despite the decline in the share of apprentices covered by the 1976 Law (e.g., Beicht et al., 2004, pp. 22 et seq.; Wenzelmann et al., 2009).

²⁹ As the sample of employers was not randomly chosen, the evidence in Table 1 may not be highly representative. The table excludes the ten British retailers in the original study, none of which trained Apprentices in the relevant establishment or division.

and most of the Swiss engineering ones (six out of eight), paid *individual* bonuses to their apprentices.³⁰

Practice comes closer to the apprenticeship ideal in the eight companies that explicitly exclude apprentices from their production-based bonus scheme for employees. Managers explain their exclusion in terms of the difference between the status of the apprentice, seen as primarily a learner, and that of the employee, seen as a producer, and in particular of the tendency of bonus pay to reduce skill learning by increasing task specialisation. By contrast, some of the other employers view the apprentice's exposure to the work pressures created by performance bonuses as an important ingredient of skill learning.

Although none of these companies' bonus schemes applies to performance in vocational college alone, in one-third of them the performance in question involves part-time vocational education as well as production. All are in engineering; retailing managers appear to attach less importance to apprentices' learning in part-time education. Those engineering companies give weight to both the education and the production dimensions of the apprentice's role, and thereby conform to the ideal more closely than do the others.

The resurgence of performance-bonuses for apprentices, if that is what it is, should not however be interpreted as indicating a return to the repetitive work tasks and production-oriented training of much post-war British apprenticeship. In these companies it represents rather a means of encouraging the apprentice's responsibility for his or her own learning and career development, part of Human Resource Management rather than Taylorist practice (Ryan et al., 2007).

Finally, apprentice pay may be covered by a statutory minimum wage. Where that is so, the workplace aspect of the role of the apprentice is emphasised, not the student one. The imbalance is in some countries countered with a sub-minimum wage for apprentices, or for youth employment in general (Ryan, 2001a). The absence of a national minimum wage in Germany and Switzerland means that there is nothing there to weaken the status of the apprentice as a learner.³¹ In Britain, by contrast, the National Minimum Wage covers Apprentices as well as employees. Some distinction between Apprenticeship and regular employment is however present, in the entitlement to only the lowest sub-minimum rate for Apprentices who are 16–18 year old or in the first year of their programmes, and to less than the

³⁰ As some of the firms that pay production-based bonuses to their apprentices exclude apprentices during the first phase of their training programmes, the evidence overstates somewhat the departure from the ideal.

³¹ Although the extension agreements that previously required non-union firms to pay the collectively agreed rates for apprentices have been weakened, non-covered employers are still required to pay at least 80% of those rates (Beicht, 2006).

full adult rate for other Apprentices aged less than 21 years (LPC, 2009, ch. 6; Ryan et al., 2011).³² To that extent, the apprenticeship ideal retains some influence.

Relative Pay

The final aspect of the positioning of the apprentice between the full-time student and the employee is the level of apprentices' pay: the higher it is, the closer the apprentice stands to the employee; the lower, the closer to the full-time student.

Apprentice pay has to be standardised for differences in general pay levels across time and place, which is normally done by reporting it relative to the pay of full-time employees in the same occupation, sector, country and year.

Historically apprentice pay was low compared to that of skilled employees. In British and German metalworking around the middle of the last century, an apprentice received less than half the rate of a skilled employee, even in the final year of training: 47.5% for fifth year apprentices (20 year olds) in Britain in 1940, and 33% for fourth year apprentices (usually 19 years old) in North-Rhine/Westphalia in 1955 (Ryan 1993, Figs. 2A, 2B1). Apprentices at earlier stages of training were paid still less. The difference in pay between apprentices and employees was clearly substantial.³³

That largely remains the case in Switzerland and Germany, but not in Britain. Returning to the matched sample of engineering companies in the three countries (Table 1, above), the relative pay of apprentices in Britain is nowadays much higher than it was sixty years ago, but it has remained low in Germany and, particularly, in Switzerland (Table 2). In the British engineering plants studied, apprentice pay starts at almost half the skilled rate and averages nearly two-thirds over the training period as a whole. In Switzerland, the comparable apprentice starts at only one-eighth and averages only one-fifth, taking the four years of training as a whole. Germany lies in between, with relative pay rates starting somewhat below one-third and rising only slowly thereafter.³⁴ To that extent, the differentiation of the apprentice from the employee is weaker in Britain than in Germany and Switzerland. The low pay of Swiss apprentices indicates their particular closeness to full-time stu-

³² The Apprentice sub-minimum is 42% of the adult rate (http://www.direct.gov.uk/en/Employment/Employees/TheNationalMinimumWage/DG_10027201; accessed 28 July 2011).

³³ The relative pay of apprentices in post-war British metalworking is still lower when measured in terms of earnings instead of base rates (Ryan, 2010).

³⁴ As the data in Table 2 are calculated using the pay of newly qualified rather than typical skilled workers, they are not strictly comparable to those for Germany in the 1950's, for which apprentice pay is standardised by the pay of the representative skilled worker (Ecklohn), not the newly qualified one.

Table 2 Relative pay of metalworking apprentices in 24 companies, 2008–2009 (%). Base rate of pay as percentage of that of newly qualified skilled employees in the same occupation and establishment (Source: Ryan et al. (2010, Table 7))

	Year of training					Number of cases
	1	2	3	4	All ^d	
Britain ^a	48.5	58.5	68.3	78.5	63.5	8
Germany ^{b,c}	30.5	32.2	34.5	36.3	33.4	8
Switzerland ^b	12.4	16.0	21.5	27.9	19.5	8

a. Participants in the Apprenticeships programme (Level 3).

b. Includes 13th month pay (*Weihnachtsgeld*) and holiday pay (*Urlaubsgeld*) where paid.

c. Establishment (or company) level base rates, where different from *Tarif* rates.

d. Unweighted average across all years of training.

dents, consistent with a median starting age of 17.6 years, nearly two years younger than for their British and German counterparts (Ryan et al., 2011, Table 10; Teuber et al., 2011).

Apprentice pay is typically studied by economists as a determinant of the distribution of training costs between employers and apprentices. Considered here as evidence of the positioning of the apprentice between the student and the employee, it too suggests a closer approximation to the latter nowadays in Britain than in Germany or Switzerland.

Determinants

The four attributes of apprenticeship discussed here show interesting differences across time and place. Many changes are visible over time – in particular, a tendency for apprentices' status to move closer to that of employees in Germany, Britain and Italy, and to have become particularly close thereto in Britain and Italy. By contrast, in Switzerland there has been less change, and in particular less convergence on employee status. What might account for such differences and changes? This section suggests some answers.

The first point is that, while the apprenticeship ideal may be clear as a concept, it is not easily realised in practice. A distinct and autonomous status for the apprentice, straddling the worlds of the school and the workplace, is not easily established

and maintained. That difficulty reflects three factors: the transitional nature of apprenticeship, the economics of training and political conflict.

First, apprenticeship involves a transition – between youth and adulthood, from the school to the workplace, and from full-time student to regular employee. Its transitional nature facilitates differences in the relative importance within the whole of participants' prior status (student) and subsequent status (employee).³⁵ The point can be illustrated by Britain in the 1940's, when the Engineering Employers' Federation recommended to member firms that they offer part-time vocational education to apprentices during the first two years of training (i.e. to age 18), but not during the subsequent three years, as demanded by trade unions (Ryan, 1999, p. 44). The employers' stance was consistent with a view of the younger apprentice as closer to the student and of the older one as closer to the skilled employee. It contrasted to the requirement in German and Swiss practice for participation in part-time vocational education throughout the training period.

The transitional aspect is visible nowadays in the increase in the share of their time that apprentices spend in more productive activities as they go through training – as found by studies of training costs for British, German and Swiss apprenticeship (Dionisius et al., 2009, pp. 12 et seq.; Hasluck et al., 2008, p. 15). Indeed, as apprentices near the end of training they may find themselves treated by their employers, and view themselves, as skilled labour in all but name – and the discrepancy between their productive contributions, on the one hand, and their status and pay, on the other, can generate discontent.³⁶

Second, the economics of training points to the skill requirements of occupations and training programmes as an influence on the position of the apprentice. When apprenticeship involves the prolonged learning of a costly transferable skill, as, e.g., in heavy engineering nowadays, market forces favour low apprentice pay. At the other pole, when 'apprenticeship' represents little more than the repackaging of bespoke on-the-job training programmes for current employees, as typically in sales Apprenticeships in British retailing, market forces generate little difference in trainees' pay relative to that of regular employees. The former situation lies close to that of the full-time student, the latter particularly close to that of the regular employee (Dustmann and Schoenberg, 2010; Ryan et al., 2010; Stevens, 1994).

³⁵ The recent growth of adult Apprenticeships in England represents the shedding of yet another of the traditional social functions of apprenticeship, viz. as a vehicle for moving from childhood to adulthood (Snell, 1996).

³⁶ The difficulty was marked in British engineering in the Second World War. The 1941 strike movement of engineering apprentices was fuelled by the frequency with which fourth and fifth year apprentices found themselves supervising recently inducted female 'dilutees', who, unlike the apprentices themselves, received the skilled pay rate for their work despite having undertaken less training (Ryan 2004, p. 57).

The third factor is political conflict, broadly construed, which continuously shapes and reshapes institutions. The status of the apprentice is pulled to and fro between that of the employee and that of the student by the interests of employers, trade unions, vocational teachers, and public regulators – and particularly by the relative power of employers. A leading example concerns the upgrading of the component of part-time vocational education. That occurred in both Britain and Germany only after prolonged struggles between educators, trade unionists, and public officials, on the one hand, and employer representatives, on the other. The conflict was resolved satisfactorily in each country only in the 1960's, at a time of exceptional influence for social democratic politics (Busemeyer, 2009b; Taylor, 1981; Thelen, 2004; Zeitlin, 2008).

Some of the changes in the standing of apprentices discussed in the previous sub-section can be understood in similar terms. Employee status and the right to strike were promoted for apprentices in Germany by trade unions and resisted by employers, as were the curbing of incentive pay and the raising of relative pay for apprentices in Britain. Upsurges of apprentice discontent were associated, primarily in Britain but also in Germany, with increased relative pay for apprentices (Ryan, 1993, 2010).

Divisions within the conflicting camps matter too. Employers themselves often disagreed about the issues – e.g., in Britain, about the response to trade unions' demands for the right to represent apprentices, and about support for compulsory part-time education (Zeitlin, 2008). Similarly, union policies have differed greatly from context to context, ranging from the exclusion from the workplace of all non-employment contracts for youth, as widely encountered in Italy, to their regulated inclusion, as in Germany and Britain. Given that, German unions proved more willing than their British counterparts to restrain the pursuit of higher pay for apprentices, as part of their stronger commitment to high training quality (Garonna and Ryan, 1991; Marsden and Ryan, 1991).

Conclusions

The ideal of apprenticeship that this paper has adopted – the integration of theory and practice, the classroom and the workplace, in programmes of vocational learning – focuses on a central attribute of vocational education and training systems. It offers a way of describing, analysing and evaluating differences in those systems across time and place. It is grounded in the aspirations of humanist educators, and in the approximation to those aspirations by the training practices of the

German-speaking economies, as well as those in metalworking in modern Britain. It is explicitly normative, in evaluating the variety of practice that goes nowadays under the rubric of 'apprenticeship', and asking how much of it truly constitutes apprenticeship.

This paper has analysed the extent to which the ideal is realised in practice, in terms of apprentices' contractual status, relationship to industrial disputes, payment systems, and pay levels. The evidence presented here is partial and its interpretation speculative. Nevertheless, it suggests that even the closer approximations to the ideal stand some distance from it – as exemplified by the contractual status and the right to strike of German apprentices. The closest approximation to the ideal among the four countries considered here is found in Switzerland; the furthest from it, in Italy, with Britain in close proximity thereto.

Such outcomes may be understood in terms of: the transitional nature of apprenticeship itself; the economics of training; and the conflicting interests of the social actors who have an interest in apprenticeship – employers, trade unions, educators, public officials, politicians, and apprentices themselves – and who seek to mould it to their own interests.

The ideal itself has limitations. It is narrow, focusing on a single, educational, dimension of a multi-dimensional phenomenon. It clashes with other values: for example, advocates of lower income inequality may favour employee status for Apprentices despite its inconsistency with the apprenticeship ideal. The ideal is ahistorical. The needs of both young people and the economy may change in ways that alter its appeal – though arguably contemporary changes should increase its appeal, given the growth of both the general educational attainments of young people and the skill requirements of the economy. Lastly, differences in the implementation of the ideal are to be expected as a result of differences in how apprenticeship programmes are regulated, specifically as part of employment relations.

Nor will the ideal appeal to proponents of the non-educational variants of 'apprenticeship', for whom the requirements of occupational competence need not involve part-time vocational education. Controversies over the ideal's acceptability cannot readily be resolved, but the ideal itself may at least sharpen the focus. For example, although the complexity, opacity and mutability of England's Apprenticeships programme and its Italian counterparts impede their evaluation, the ideal suggests a way to reduce that difficulty.

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Demarcations Between Vocational and Academic Education and How to Overcome Them

Felix Rauner

Introduction

The societal, political and economic interest in permeability between vocational and academic education is a result of

- the paradigm of equal opportunities: This concept refers to the claim of individuals to make use, irrespective of their social background and the income of their parents, of all opportunities for qualification offered in the education system as long as they fulfil the relevant entry requirements;
- the objective in education policy to make the opportunities for transition from school to work and from vocational to academic education easily accessible in order to stimulate lifelong learning and to promote the mobility of employees;
- the economic interest of enterprises and business associations to strengthen the dynamics between education and employment systems through a high flexibility of the education system and the mobility of the employees.

In education systems that are as highly diversified and stratified as the one in Germany the organisation of permeability between educational levels and school types and above all between vocational and higher education is particularly important. One reason is that the various interfaces that exist due to the complex architecture of the system almost inevitably lead to barriers and boundaries above all between vocational and higher (scientific) education. The cause is not so much a lack of relevant legal provisions but rather a deficit in terms of workability and pedagogical foundation of these regulations.

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In Germany, for instance, the proportion of graduates from dual VET – not counting those who also have a regular university entrance qualification – who enter university education after their vocational training is only about 1%. Whether it is true that the federal system in Germany leads to the greatest amount of regulations concerning permeability and transition in comparison to the other OECD countries while at the same time there is less actual permeability in the German education system than anywhere else is a matter that cannot be discussed here. When we dismiss the German debate and practice regarding permeability in education and turn instead to the international trends concerning the shift ‘from the industrial society to the knowledge society’, the problem of permeability takes a different shape.

The ‘Academic Drift’ and the Implications for the Interrelation Between Education in the Labour Market

When one adopts the idea put forward by Daniel Bell in his 1975 study ‘The coming of post-industrial society’ with regard to the relevance of scientific knowledge in the post-industrial society, the problem of permeability in education disappears. The idea is roughly as follows: The change of employment structure in the second half of the twentieth century has taken place just the way it had been predicted by Fourastié in 1949. The tertiary sector – the service sector – would become the dominant part of the employment system. The production sector, which had been dominating until the middle of the twentieth century, would largely lose its importance as the exploitation of technologically induced rationalisation potentials would lead to a dramatic decline of the number of jobs and the remainder of productive activities would be relocated to less developed countries. Moreover, the role of information in the work process would lead to an entirely new quality of work. The ‘knowledge worker’ was regarded as the new type of employee. Facing this scenario that was propagated by labour market research, Daniel Bell put forward the hypothesis that theoretical (scientific) knowledge would replace labour and capital as the leading development principles of industrialism. All spheres of society, especially economy, politics and the social structure, would be oriented towards the new axial principle of the post-industrial society, theoretical knowledge. This knowledge would be generated in research processes and transferred above all via higher education. According to Bell, it would be crucial to avoid the down-to-earth perspective of the qualification requirements of paid work, for these requirements were allegedly inconsistent with systematic knowledge based on the organisation of

scientific disciplines. The question as to how the education system might be successfully disconnected from the employment system was left open by Daniel Bell.

In spite of a huge amount of contrary evidence from diverse research disciplines Bell's ideas did not cease to be influential in political debates. Only a few years ago a publication on *The transformation of education (Bildung im Umbruch)* was published (Baethge et al., 2007), which repeats Bell's central hypothesis with almost the same words: 'The shift from the pre-industrial to the post-industrial employment society can be characterised – in terms of the types of knowledge concerned – as a change from experiential to systematic (theoretical) knowledge' (ibid., p. 74 [translated from German]). The central role of systematic (theoretical) scientific knowledge is emphasised as the fundamental characteristic of post-industrial societies. This leads to the following conclusion: 'In a society that increasingly regards itself as a knowledge society the universities are the primary source of economically useful knowledge and highly qualified employees' (Mayer, 2003, p. 581; quoted in Baethge et al., 2007, p. 75 [translated from German]). When this thesis is accepted, the question of permeability between vocational and higher education becomes irrelevant. The educational concept of 'college for all' comes into the focus. At first sight it looks as if during the past two decades many OECD countries succeeded in designing education systems in Bell's sense with up to 80% of young people having access to higher education (Fig. 1).

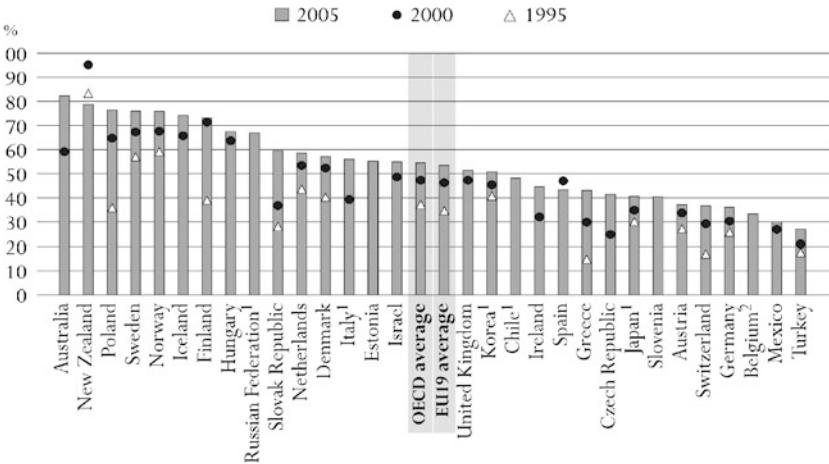


Figure 1 Entry rates into tertiary-type A education (1995, 2000 and 2005) (Source: OECD (2007, p. 280))

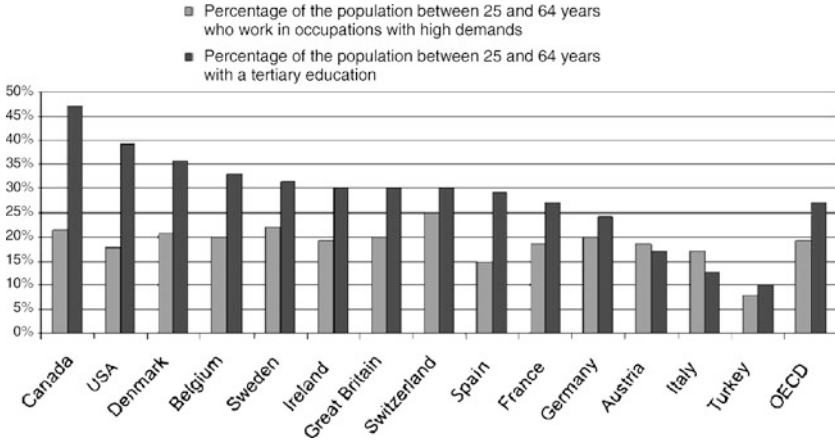


Figure 2 Highly qualified graduates and the employment system in the OECD (Sources: OECD (2008); Müller (2009, p. 45))

The high university entry rates between 70% and over 80% in a number of OECD countries are a clear indicator of an education policy that aims to implement a system in which continuous learning pathways exist from elementary school to higher education. Regulations for transition are largely obsolete because it is up to the young people and their parents themselves to decide whether to continue learning and to proceed to higher education after the end of compulsory schooling. Of course in such a system there are standards for university entry as well. However, these are often defined by the universities. For instance, the top-ranking universities in the United States and in the UK have defined admission standards that allow them to select the best school leavers.

The Effects of a 'College for All' Policy

The Growing Gap between the Education System and the Employment System

The academic drift in education and the associated 'college for all' policy leads to a gap between the growing number of university graduates on the one hand and the number of highly qualified jobs (ISCO 1-3) on the other. This is true for an increasing number of countries in the OECD (Fig. 2).

Approximately 20% of the employees in developed countries are classified as being employed in high-skilled occupations. The proportion of university graduates who are employed as high-skilled workers is 69% on average in the OECD countries. In some OECD countries the share of those employed at their formal qualification level is considerably lower, e.g. in Denmark (61%), Canada (48%), Ireland (50%) and Spain with only 37%. In countries with an advanced dual VET system, on the other hand, this figure is much higher, e.g. in Germany (89%) and Switzerland (90%). This means that in these countries only 10% to 11% of university graduates are employed below their skill level or belong to the small group of unemployed graduates.

Whether and to what extent the proportion of high-skilled workers in the employment system will rise is under debate. The introduction of lean management structures and the associated relocation of competences and responsibilities into the productive work processes in the enterprises suggest that management levels will be reduced and the demand for managers will decline. This trend can be compensated by an increasing demand for research and development staff. A current research issue is: what will be the net outcome of these two opposite development trends. What seems to be certain is that the decrease of low-skilled jobs will accelerate until a level of about 10% of all positions is reached. On the whole this means that the proportion of employees in the medium-skilled sector (skilled workers, master craftsmen etc.) tends to be stable or might even increase slightly (cf. Müller, 2009). This development supports the view that the intermediary or medium-skilled employment sector remains the backbone of economic development and competitiveness of national economies. This is the reason for the crucial role of the professional qualification of skilled workers and of the comparative study of the performance of different VET systems. When the link between the education system and the employment system is neglected, as it is the case in countries with a 'college for all' policy and high university entry rates, the result is the emergence of formal and informal qualification structures in and after university studies. These qualification structures are oriented towards the employability of graduates.

Vocationalism in Higher Education

In many countries with a 'college for all' policy there is a tendency to establish study programmes and courses below the level of the Bachelor degree. Besides two-year programmes so-called 'some college' certificate courses, which last only one or two semesters or even only a few weeks, are offered at American universities. The subjects covered by these courses already show that these are learning opportunities at the level of adult education that do not have the quality of professional training

programmes. For instance, the University of Utah offers ‘some college’ courses in home & gardening, Apple training, marriage arrangement or, under the heading of natural science, a course in Colorado Excursion. Norton Grubb points out that the proportion of employees in the Subbaccalaureate Labor Market (SBLM) – that is, the proportion of those who have only a ‘some college’ qualification – has steadily increased from an initial figure of 13.1% in 1967, to 21% in 1988 and 28.3% in 1992. By now this figure can be estimated at approximately 40%. Norton Grubb draws the following conclusion from his analysis:

The SBLM in the United States proves to be a good example of a relatively free-market approach to the transition between schooling and work. As others have stressed in comparing Germany with Great Britain ... this transition can be governed by relatively institutional mechanisms, in which government regulation, strong unions and employer associations, a carefully established wage structure, and a culture rewarding vocational education combine to create a well-defined path from schooling into employment (Grubb, 1999, p. 174).

The Australian Example

Australia is an example of the few countries where there is a high enrolment rate in higher education and at the same time an advanced system of dual vocational education and training. This looks like a contradiction at first sight since school leavers usually opt *either* for higher education *or* for vocational training. Apparently this pattern does not apply to Australia as the enrolment rate in higher education is 82% (2009) while the participation rate in the Australian Apprentices programme is about 4.1%. This figure is the ratio of 420,000 trainees and 10.5 million employees. This rate is comparable to the situation in countries with advanced dual training systems. This seeming contradiction can be explained by the fact that approximately two thirds of the trainees have a university degree or have entered vocational education and training after dropping out of higher education. Therefore the average age of trainees in Australia is considerably higher than in countries like Germany, Austria or Switzerland.

The Chinese Model: Higher Vocational Education

Education policy in China responds to the one-child families’ strong desire to give their children the opportunity for higher education in the following way: higher education institutions establish two- or three-year vocational programmes, and higher vocational education institutions are created, hoping that this way the stigmatisation of vocational education can be counteracted effectively. By organising vocational education as ‘higher’ (academic) education, China managed to improve the social reputation of (higher) vocational education. However, this also intensifies the

academic drift in education and weakens the vocational programmes at the upper secondary level. It is far from clear whether Chinese education policy will be able to maintain the currently adopted method of controlling the student flow by means of rigid selection procedures on the basis of standardised tests. One reason why the culture of avoiding vocational training at the secondary level is so strong is the fact that the decision for vocational training at this level is irrevocable in character. Apart from few exceptions the route to higher education is closed once and for all.

The Interrelation between Professional and Scientific Knowledge: Implications for an Architecture of Education

Professional knowledge is a prerequisite for understanding and mastering tasks in the world of work. In this context the paradigm of holistic (complete) problem solving applies.¹ For instance, a heating specialist who plans and installs the heating equipment for a house has to observe the following criteria for the complete solution of professional tasks (cf. Fig. 3).

1. Clarity/presentation: The results of professional tasks are anticipated in the process of planning and preparation, and they are documented and presented in such a way that principals (customers, work superiors) can understand and review the proposed solutions. Accordingly the explanation and presentation of a solution is an instance of professional learning and professional work. A core element of communication in the work context is the ability to express one's thoughts in a clear and organized way by giving accounts, drawings and sketches. The adequacy of the presentation with regard to the facts is a sign of professionalism.
2. Functionality: The functionality of a proposed solution is an evaluation criterion that immediately presents itself. Functionality refers to the instrumental technical competence or the context-independent, subject-specific knowledge and skills. Evidence of the functionality of a solution is fundamental and determines all further requirements that are posed for the solution of work tasks.

¹ The concept of holistic (complete) solution of professional tasks was developed by Rauner (2006, 2011). It was applied as the basis for operationalising the requirement dimension within the competence assessment model of the KOMET project (cf. Rauner et al., 2007; Rauner et al., 2009a, pp. 74 ff.; Rauner et al., 2009b, pp. 13 ff.) and evaluated by psychometric testing (Erdwien and Martens, 2009, pp. 62 ff.).

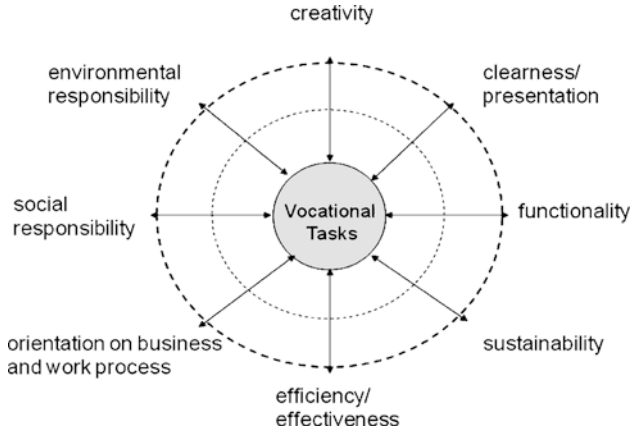


Figure 3 The eight criteria of holistic problem solving (Source: own work)

3. Sustainability/utility: Professional activities, workflow, work processes and work assignments are ultimately oriented towards a customer, whose concern is the utility of the work result. In highly diversified production and service processes the aspect of utility often gets out of sight when subtasks are performed and vocational education is reduced to the aspect of action. The criterion of utility orientation therefore points at the utility of a solution in the entire context of work. A high utility of a solution depends not only on its immediate applicability for the customer, but also on the prevention of liability to failure and the consideration of aspects of easy maintenance and repair. Sustainability of application and the perspectives for enhancement must also be taken into account when the utility is assessed.
4. Economy: Professional work is in principle subject to the aspect of economy. The context-specific consideration of economic aspects in the solution of professional tasks is a characteristic of the competent activity of professionals. There is a constant necessity in professional work to evaluate how economically a task is carried out, and to consider quite diverse types of costs and influences. Costs that will be incurred in the long run (derivative costs) need to be taken into account as well. Decisions are made on a summative assessment of the ratio of expenses and benefits. In addition, economic responsibility also includes an awareness of the societal aspects as not all strategies that make sense at the organisational level may also be acceptable for the national economy.

5. Business and work process orientation: This criterion refers to the preceding and the following operations in the organisational hierarchy (the hierarchical aspect of the business process) and in the process chain (the horizontal aspect). This aspect is particularly relevant in an environment characterised by programmed work systems in networks in and between companies. A business process oriented solution takes into account the linkages with the preceding and following processes and includes also the aspect of cooperation beyond the boundaries of one's own professional work.
6. Social compatibility: This criterion refers above all to the aspect of a humane organisation of work, health protection as well as the social aspects of professional work that go beyond the work context (e.g. the often divergent interests of principals, customers and society). This includes aspects of work safety and prevention of accidents as well as the potential impact of a specific solution on the social environment.
7. Environmental compatibility: By now this criterion has become relevant for almost all work processes. What is at stake here is not the aspect of environmentalism in general, but the professional and technical requirements for professional work processes and their results that can be considered relevant for the criteria of environmental compatibility. It has to be taken into consideration whether environmentally friendly materials are used and whether an eco-friendly work organisation is followed in the solution of the work task. Other issues that need to be considered are energy saving strategies and aspects of recycling.
8. Creativity: The creativity of a solution is an indicator that plays an important part in professional problem solving. This is due to the fact that the room for manoeuvre for the solution of professional tasks varies strongly in the different work situations. The criterion of a 'creative solution' has to be interpreted and operationalised in an occupation-specific way. In the arts and crafts, creativity is a core aspect of professional competence. In other domains the aspect of 'creative solution' is a relatively independent concept of professional work and learning. The distinction of creativity in a specific solution also shows the sensitivity for the problems to be solved. Competent professionals are expected to find creative and unusual solutions which at the same time make a meaningful contribution to the attainment of the goal.

Whenever one of these criteria is neglected, the worker runs the risk that the solution he offers to the customer does not comply with legal and technical rules and may have flaws with regard to its economic operability and accordingly with regard to the utility of the device.

Under the conditions of the market, non-compliance with the criteria of holistic problem solving is associated with severe disadvantages. The objective and subjective requirements that characterise the solution of professional tasks and problems do not determine correct solutions like those in mathematical operations. Instead the point is to become aware of the situative conditions of professional tasks and to consider all important requirements and circumstances that influence the solution of the problem. What is crucial in this process is to reconcile contradictory specifications of the customer – ‘I would like a high level of functional quality, but at an affordable price’ –, applicable norms and the requirements that result from the company’s interest in a professional planning, fulfilment and quality management of orders. Moreover, professional activities are increasingly influenced explicitly and implicitly by the social demand to consider not only one’s own preferences, but also the aspect of environmental and social compatibility in the world of work and technology. Advising a customer who buys a car in choosing between an electrical, hybrid or diesel engine requires not only technical know-how, but also the ability to support the weighing of the relevant criteria in order to find a ‘smart’ compromise. This example illustrates a fundamental principle of professional problem solving competence. Work process knowledge includes knowledge to guide action, knowledge to explain action and a third type of knowledge, which sustains the capacity of holistic problem solving: knowledge to reflect action (see Fig. 4).

The question of the genesis of a work situation, a product or a work and business process (‘Why this way and not another?’) is a stimulus for the understanding of the path dependency of a situation and the resulting tasks.

The question, ‘Can it be done another way?’ follows next, and this is a motivation to test and exploit the room for manoeuvre. Due to the increase in productivity in the computer and technology based world of work the constitutive idea of holistic problem solving becomes more important. Incomplete solutions can lead to failures with dramatic consequences. This leads to the necessity to use vocational education for the development of complete (holistic) problem solving.

This type of competence is represented by the tradition of master craftspeople. A short glance at the professional learning pathway from apprenticeship to the awarding of the title of master craftsman after a final examination shows already how reflected work experience leads to a domain-specific, holistic problem solving competence. The legal requirement that the setting up of a business in a number of craft trades can take place only after a master craftsman’s test is rooted in this fact.

Scientific knowledge is the antithesis to professional knowledge. Scientific knowledge emerges from the research processes of the academic system, which is characterised by a high division of labour. The capacity of the sciences to generate new knowledge in an increasingly diversified system of disciplines is the key to the

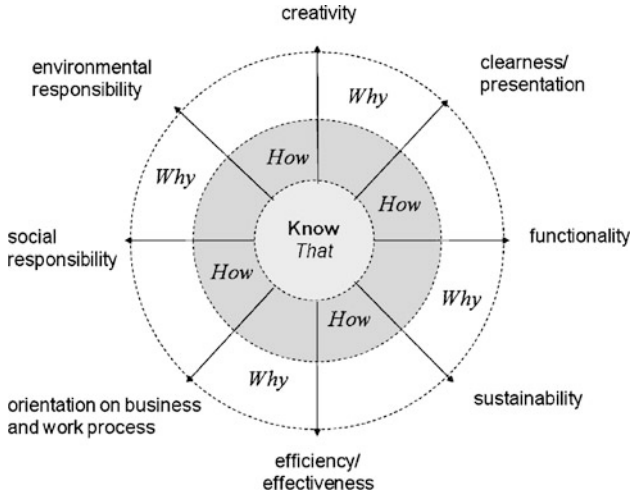


Figure 4 Work process knowledge (Source: own work)

knowledge explosion that took place in the past century and ever since the emergence of the modern university. Philosophy as a meta-discipline that is located somewhere above the sciences, the interpretation of sociology as the 'science of reality' (Max Weber) and the attempt of pedagogy to focus on the entire personality of the learner: all of these are expressions of the intention to preserve a holistic understanding and practice in the academic system. But even these 'subjects' were not and are not able to escape the constraints of disciplinary specialisation, except at the price of marginalisation. A typically broad introductory phase, in which the student is acquainted with the fundamental theories of a discipline, is followed by advanced studies that are characterised by increasing specialisation and the in-depth study of specific research problems according to the 'state of the art'. There is no alternative to this approach in the education of scientists since the objective of acquiring research-based knowledge necessarily requires specialisation. The theses that have to be submitted at the end of undergraduate, graduate or doctoral studies are regarded as part of the research process and as a proof of the ability to make a contribution – however humble – to the generation of new knowledge and the progress of the sciences.

Professional knowledge, which aims at holistic problem solving, and scientific knowledge, which is at the centre of academic professionalism, are standing in a dialectic relationship. The two types of knowledge are fundamentally different and

at the same time constitutive of each other. Without the assimilation of scientific knowledge in the system of vocational education, professional knowledge would stagnate. It would lose its relevance for the capacity of holistic problem solving. On the other hand the scientific knowledge needs to be embedded in the practice of finding solutions to real world problems. Scientific professionalism does not by itself lead to responsibility. Science considers itself to be non-instrumental. It is only the embedding of academic expertise into the dynamics of society, the social organisation of innovation that makes it possible to exploit the potentials of science.

This has consequences for the organisation of a modern education system. In the development of international and national classification systems that describe the level of educational attainments or occupations, one-dimensional hierarchical approaches like the ISCO (International Standard Classification of Occupation), the British system of National Vocational Qualifications (NVQ) or the European Qualifications Framework (EQF) are widely used. These systems generally ignore the dialectic relationship of academic and vocational qualification. The capacity of holistic problem solving is attributed to 'lower' occupations while scientific knowledge and the corresponding qualifications are allocated to the higher levels of these classification systems. This is one of the roots of the academic drift in education and the corresponding trend towards vocationalism in higher education. In the context of American pragmatism instances of higher vocational education emerged relatively early. The move of vocational education to universities, and the associated turn from the university as a place of science education, is a response to the stigmatisation of vocational training as an inferior type of learning that is often reserved for marginalised groups.

The establishment of and adherence to one-dimensional hierarchical structures in the education system fail to acknowledge the importance of professional knowledge and weaken the deployment of academic and professional qualifications alike.

A remarkable revision of a one-dimensional hierarchical national qualifications framework took place in South Africa in 2004. The education system, which followed the model of the British NVQ system, had turned out to be conflictual and counter-productive for economic development. Since the revision was a first step towards a system of parallel educational tracks as outlined in this contribution, some characteristics of this systemic change shall be discussed in the following.

The South African Example: Towards a Dualism of Educational Tracks

In the National Skills Development Handbook 2010/2011 (RainbowSA, 2010) there is a discussion of the following question: why is the occupational learning system (OLS) necessary?

Some of the answers are characteristic for the international debate.

[T]here is a fundamental rift between the actual practitioners of *discipline based learning* (primarily in the Dept Education), and *work based learning* (primarily in the Dept Labour), and that in fact this kind of rift is visible all over the world in approaches to learning and knowledge.

Different terms are used to describe this rift, including:

Academic vs Practical
Theoretical vs Experiential
Teaching vs Learning
Inputs vs Outputs
Institutions vs Workplace
Discipline vs Occupation

It is in fact a feature of modern society that increasing levels of specialization across all fields is resulting in a fragmentation of knowledge from the perspective of knowledge 'consumers' The need for integration and connections between these silos of specialized knowledge becomes very apparent when we try and *apply* knowledge to solve *human problems*. (ibid., pp. 236 et seq.)

The analysis of the South African experts also leads to the distinction of scientific and professional knowledge as well as the necessity to implement the concept of holistic problem solving in the education system: 'It is then that we realise that although we have reached an advanced level of specialisation in a particular field of knowledge, it is the ability to holistically combine and apply all the relevant fields of knowledge that really results in effective solutions' (ibid., p. 237). This leads to a fundamental criticism of the NQF, in which the qualification levels from 5 up to 10 were reserved for higher education. From 2004 onwards a structure of parallel and fully equivalent educational tracks – one for academic and one for vocational education – was developed (Fig. 5). While the 'Specialisation Career Path' emphasises specialisation and development of academic knowledge and skills, the 'Management Career Path' leads to the development of entrepreneurial skills and an advancement in management responsibilities (cf. ibid., p. 267).

Both tracks include the possibility to attain the highest qualification level (level 10). The characteristic of the vocational track is the concept of holistic problem solving. South Africa thus has one of the most advanced education systems, even though the degree of vertical and horizontal differentiation between occupations can be only a first step from a modular qualification structure to a structure based on occupational profiles. The ISCO classification, which underpins the South African system, is not suitable for the establishment of modern comprehensive oc-

NQF Levels	Descriptor	Specialisation Career Path	Management Career Path
10	High-level occupations and professions	Research professionals	Strategic management
9		Professionals	Senior management
8		Para-professionals	
7	Mid-level occupations	Support professional technologists	Middle Management
6	Occupations	Technicians	Supervisory Management
5		Specialised Sales	

Figure 5 Structure of parallel tracks for academic and vocational education (Source: RainbowSA (2010, p. 267))

cupations since this classification does not distinguish between job profiles or sets of work tasks on the one hand and modern training occupations on the other.

The Swiss Example

Another approach to the development of a system of parallel tracks is taken by Switzerland with its concept of an integrated dual education and training system. Two features are the basis of an education system with a high level of mobility.

1. Dual vocational education and training in one of the approximately 250 comprehensive training programmes is perceived not only as an attractive learning opportunity, but also as an equivalent entry route to higher education. This is made possible by the institution of the *Berufsabitur*, a university entry qualification that can be attained already in the course of vocational education and training.
2. The universities of applied sciences in Switzerland are especially focusing on graduates of dual training programmes with *Berufsabitur* as their target group.

Universities of applied sciences are thus part of the VET system. At the same time they are part of the higher education system, offering Bachelor's degrees that give access to Master's degree programmes.

Parallel Learning Pathways: A Permeability Structure for the Area of Vocational Education and Training

The alternative to the academic drift and the control of educational participation by rigid selection procedures is a systems architecture that allows for a parallelism of learning pathways.

The pillars of this architecture are:

- a science education that pays attention not to lower the admission requirements in terms of the capacity to study a scientific discipline;
- an integrated dual vocational education and training pathway from initial training to the level of skilled workers, subsequent dual continuing vocational education and training (CVET) programmes (e.g. for master craftspeople) and dual higher education programmes that can be attended alongside the job.

The characteristics of the integrated dual track are as follows.

- Each of the three qualification levels (skilled worker, master craftsman or equivalent, university degree) involves the attainment of professional aptitude. This criterion is distinctive of the dual track. The insight that each occupation needs to be learned in practice is embodied in the dual structure of vocational education and training programmes. Therefore school-based or university-based (pre)vocational education needs to be followed by a period of (more or less regulated) on-the-job training of several years.
- The second characteristic is the learning objective of acquiring the ability to solve professional tasks completely. This is expressed more precisely by the notion of holistic problem solving. This learning objective is derived from the objective conditions in the world of work: qualified workers always need to find a solution that is convincing in a concrete situation, and they need to take into account several criteria that compete with each other, e.g. high functionality at low costs.

The importance of scientific knowledge, on the other hand, is based on the principle of specialisation. For instance, it is crucial that a physicist who specialises in the aerodynamics of aircraft wings continues to generate new subject-specific knowledge that can spread into the practice of engineering. Thanks to research and

teaching in an evermore specialised system of science there is an exponential growth in knowledge.

Between these two educational tracks – academic and vocational education – there is a multitude of learning opportunities that acknowledge both traditions of knowledge. This is true, for instance, of dual universities, vocationally oriented programmes at universities of applied sciences, and the efforts to strengthen interdisciplinary research and teaching at universities. The basis of interdisciplinarity, however, is discipline-specific knowledge.

The dilemma for education policy with regard to permeability and progression between vocational and higher education consists in the following.

- The objective of putting into effect a higher level of permeability between vocational and higher education has been identified correctly since this is the only way to make the dynamic coordination of the education and employment systems a reality,
- However the international paradigms and classification systems that aim at a standardisation of degrees and qualification levels (like ISCED and the EQF) prevent permeability. All international scales of qualification levels and educational degrees are one-dimensional and define higher education as academic or scientific education while non-academic vocational education is confined to the lower levels. This is unjustified from a scientific point of view and highly problematic for education policy.

This leads to the following consequences.

- Recognition procedures (recognition of vocational qualifications for higher education programmes) where the criteria for recognition are derived, for good reasons, from the requirements of university programmes.
- Master craftsmen and technicians (as well as professionals with comparable qualifications) are systematically excluded from higher education. All attempts to solve this problem by means of accreditation procedures or by lowering the admission requirements for university studies must either fail or weaken both educational tracks alike: vocational as well as academic education.

The conclusion that easily presents itself is a structure of parallel educational pathways that takes into account the multiple competences of vocationally qualified learners and offers adequate learning opportunities up to the highest level of professional expertise (Fig. 5).

Differentiation of Permeability

When the permeability from vocational education to university programmes is investigated, two distinctions are possible.

1. Theory-based versus manual and design-oriented occupations

In this dimension a distinction is drawn between the pole of occupations that requires a high level of manual skill and the opposite pole of knowledge-based occupations where the professional knowledge is also the basis of professional skills.

2. Differentiation according to the degree of affinity between ‘academic’ and non-academic occupations

In the second dimension a differentiation takes place according to the degree of affinity of academic and non-academic occupations. For instance, the vocational

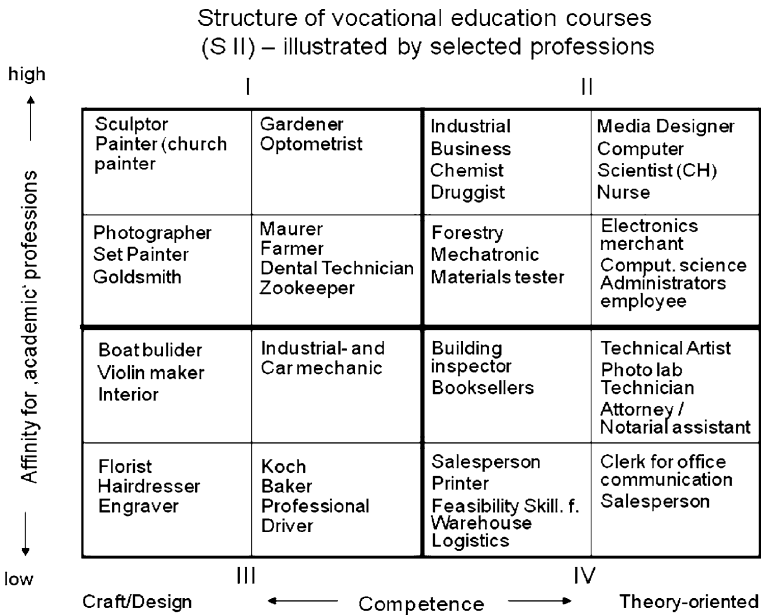


Figure 6 Structure of vocational training programmes (Source: own work)

training programme for computer specialists in Switzerland has a high affinity to Bachelor programmes in computer science. Occupations like florist, cook or insurance clerk, on the other hand, do not have an equivalent in higher education. Accordingly the regulations for the transition from vocational to higher education need to take into account (see Fig. 6) this difference.

This structure allows for the distinction of four occupational fields:

- artistic and design-oriented occupations;
- science and technology-based occupations;
- manual occupations;
- theory-based occupations.

This matrix (Fig. 6) shows that in a great many of occupations (I and II) the implementation of transition schemes is much easier to realise, thanks to the competence profiles of these occupations and their affinity to higher education, than in the large group of occupations where there is no such affinity.

A Framework for Transitions

No Universal (Cross-occupational) Regulations

Given the objective to establish an integrated (dual) vocational track from initial training up to the level of postgraduate studies, it would be rational to regulate opportunities for permeability and progression in a way that takes the existing structure of occupations and higher education programmes into account.

The Integrated Dual Vocational Track

This professional career model makes sense for all occupations that have little or no affinity to academic professions. Here it would also be an advantage if contents that are relevant for advanced vocational qualifications like the *Meister* qualification were already offered as optional add-ons during the initial training programme. The characteristic of the master craftsman's test is that the professional competence is assessed at the expert level. This is possible because the duality of vocational learning is preserved in the preparation for the master craftsman's examination. Even if the qualification of a *Meister* is attained in a dual university programme, the expert level of professional competence is achieved (Walter and Berwald, 2008).

The next step in continuing vocational education and training are second-cycle university programmes for master craftsmen and skilled workers with equivalent qualifications. A realistic option would be vocationally oriented programmes that

can be studied alongside the job. In order to increase the efficiency of these programmes the work experience should be used as a source of learning in dual Master's degree programmes.

Semi-academic Professions

In the semi-academic professions the route to higher education is open in a twofold way. The professional knowledge has a high affinity to the knowledge of corresponding academic disciplines. In the relationship of knowledge and skills it is the subject-specific knowledge that determines the skills. This leads to a methodological similarity to the academic style of learning and teaching.

For this professional group the transition from vocational to higher education is a matter of the accreditation of competences that were acquired in vocational learning processes. If, for instance, trainees in media design have a university entrance qualification, then their three-and-a-half-year training will most likely lead to a level of professional competence that is above rather than below the level of a corresponding bachelor programme. In this case the establishment of an equivalence regulation would make sense, according to which the competence of a media designer including his or her professional aptitude is recognised as an admission requirement for the bachelor examination. It must be observed that clauses like this can be successful only if they are limited to the formulation of objectives and leave the implementation to the higher education institutions themselves.

Conclusion

In the face of demographic changes an increase has to be expected in the demand for trainees in vocational education as well as students in higher education. Since a regulation of the learning trajectories by closing the entry routes to higher education is just as impossible as an early turn towards vocational education it is reasonable to call for a significant improvement of permeability in education and training. This applies especially to the types of continuing education that follow vocational education as well as appropriate types of higher education (Fig. 7).

This requires:

- graduates of dual vocational education and training who have a university entrance qualification should be admitted to the final examination for a corresponding Bachelor's degree;
- establishment of a vocational university entrance qualification that can be obtained in the course of a dual vocational education and training programme

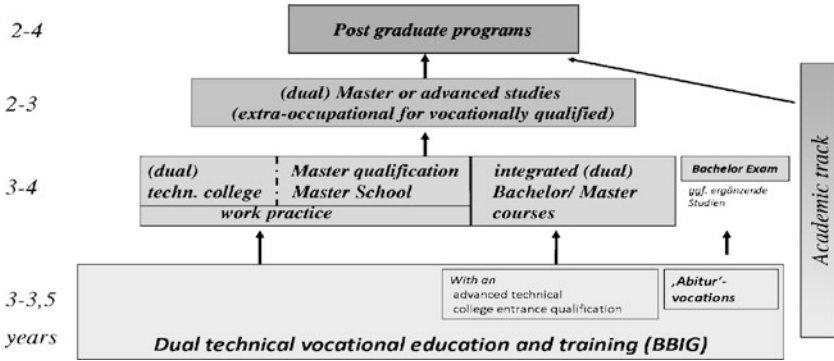


Figure 7 Integrated dual vocational track (Source: own work)

(following the example of Switzerland, this qualification should be recognised as an admission requirement for studies at universities of applied sciences);

- establishment of dual degree programmes at technical colleges (e.g. master craftsman/technician);
- establishment of genuine dual Bachelor programmes that allow for the attainment of the qualifications of master craftsman and graduate engineer at the same time.

The implementation of a modern systems architecture for education and training with an integrated dual vocational track will be all the more successful when European countries with advanced dual training systems coordinate their efforts, and develop an interest to establish these principles in the European area of education and training, and in the European labour market.

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Varieties of Competence: European Perspectives

Jonathan Winterton

Introduction

This paper attempts to offer a synthetic overview of the history and geography of competence, tracing its conceptual provenance, contrasting the main competence models and explaining European diversity by differences in labour market regulatory mechanisms and training regimes.¹ Major critiques of competence-based approaches are also discussed. In the second part of the paper, competence is considered as a policy imperative in the adoption of competence-based vocational education and training (VET) and outcome-based higher education (HE). The position of supra-state organizations like the International Labour Office (ILO) and the Organization for Economic Cooperation and Development (OECD) is addressed before analysing European level policy developments. The concluding part of the paper considers competence in practice and assesses the limitations imposed by

¹ This paper documents the presentation of the same title at the GREAT Conference: Future of VET in a Changing World, Universität Köln, 29 September–1 October 2010 incorporating additional material developed for the Audi Lecture ‘The importance of competence’ presented in Ingolstadt on 29 November 2010 in my capacity as Audi Visiting Professor at the Katholische Universität Eichstätt-Ingolstadt. I am grateful to members of the EUCLID network for continuing to develop our collective understanding of competence, and especially to my colleagues at Toulouse Business School, Françoise Le Deist and Emma Stringfellow, who worked with me on the Typology. The paper is also informed by work with experts in Lithuania and Slovenia on the development of their respective NQFs: I am particularly grateful in this respect to Irma Spūdytė AND Vidmantas Tūtlys at Vytautas Magnus University, Kaunas and to Klara Ermenc and Samo Pavlin at the University of Ljubljana.

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continuing differences in national competence models and inconsistencies in European policy instruments.

Competence as a Concept

The word competence first appeared in the Oxford English Dictionary in 1930 even if the concept has been traced to ancient Persia (Code of Hamurabbi), Greece (Plato's Lydia) and Rome (general usage). In modern management, the term competence was first used in the USA by Richard White (1959) to describe the psycho-social attributes of top performers. Arguing that intelligence (as measured by IQ) was a poor predictor of performance, White used competence, based on psychometric tests, as an alternative basis for recruitment. David McClelland continued this work and first also used the term competence (McClelland, 1973) but later (*ibid.*, 1976) changed it to competency without any change in meaning. Competency apparently did not previously exist in the English language, at least not as spoken in England. While distinguishing competency as an input or psycho-social characteristic from competence as an output reflecting the demands of the work context has logical appeal, the two terms are used far too inconsistently and interchangeably in the literature (see Winterton, 2009 for more detail), for the distinction to hold. Norris noted that 'as tacit understandings of the word have been overtaken by the need to define precisely and operationalize concepts, the practical has become shrouded in theoretical confusion and the apparently simple has become profoundly complicated' (1991, p. 332). Clearly there is no universally accepted definition of competence that is capable of accommodating the different ways that the term is used.

Grzeda (2005) associates ambiguity in the concept of competence with the practice of using the term as both an independent and dependent variable, in other words, to describe both the attributes a person must acquire and the demonstration of those in performance, or, in Hoffman's (1999) terms, inputs and outputs. Mangham (1986) noted that competence may relate to personal models, outcome models or education and training models, contrasting these with 'the standards approach' in which benchmarking criteria are used. Norris (1991) contrasted behaviourist, generic and cognitive approaches, while Gonczi (1994) distinguished behaviourist (functional), generic (underlying attributes) and holistic (incorporating knowledge, skills and attitudes) models. Mansfield (2004, p. 304) identified three different usages of competence: outcomes (vocational standards describing what people need to be able to do in employment); tasks that people do (describ-

ing what currently happens); and personal traits or characteristics (describing what people are like). Weinert (1999, p. 7) listed nine different ways in which competence has been defined or interpreted: general cognitive ability; specialized cognitive skills; competence-performance model; modified competence-performance model; objective and subjective self-concepts; motivated action tendencies; action competence; key competencies; meta-competencies.

Another problem is that practitioners and policy makers frequently use competence and skills as generic terms interchangeably. In labour market analysis for example, it is common to talk of forecasting future skills needs, identifying skills gaps and shortages, where the content corresponds much more with competence as used in this paper than with a narrowly construed conception of skill as job functions. Some of the confusion is not simply semantic, but reflects fundamental conceptual differences that are deeply rooted in ontological and epistemological approaches, as well as in specific contexts of time and space.

In Europe, competence-based approaches mostly focus on job demands rather than psycho-social characteristics of individuals and were concerned with the activities and underpinning knowledge necessary to perform competently in a particular occupation. There is wide diversity in competence models used in the different Member States, although most approximate to one of three dominant approaches developed independently in the UK, France and Germany (Le Deist and Winterton, 2005).

The UK adopted a competence-based approach in the 1980's when the VET system was overhauled to make it more responsive to the needs of employers (Rainbird, 1990). An explicitly competence-based qualifications framework was introduced with the adoption of National Vocational Qualifications (NVQs in England and Wales, Scottish Vocational Qualifications in Scotland). To achieve such a vocational qualification, an individual had to demonstrate that they meet occupational standards of competence, determined by extensive functional analysis of occupations in a variety of contexts (Mansfield and Mitchell, 1996). The objective was to enable individuals to gain qualifications reflecting what they were able to do, irrespective of how, when and where the competences had been acquired. Competence is understood to mean 'the ability to apply knowledge, understanding and skills in performing to the standards required in employment. This includes solving problems and meeting changing demand' (Beaumont, 1996, p. 34). Although there is no reference to social or behavioural issues in official reports, in practice employers have always attached considerable importance to social and behavioural aspects.

In France, competence-based approaches were stimulated in the 1990's with the revision of the catalogue of occupations by the *Agence Nationale de l'Emploi*. New laws at this time granted individuals the right to an independent skills audit (*bilan de*

competence) and in 2001 accreditation of prior experiential learning (*validation des acquis et de l'expérience*) was introduced. In 2002 the central employers' association, *Mouvement des Entreprises de France* launched the *Objectif compétence* initiative to promote competence-based approaches to training at work. Qualifications have always played a dominant role in the French labour market but since 2002 the qualifications framework has been undergoing systematic revision with the adoption of competence-based qualifications (Le Deist, 2009). The French competence model is centred on a *triptyque* of knowledge (*savoir*), functional competences (*savoir-faire*) and behavioural competences (*savoir-être*). The landmark national training agreement of September 2003 also promoted competence by requiring sectors to identify training priorities and companies to develop training plans that reconcile individual training needs with sector priorities (Le Deist and Winterton, 2011). Competence frameworks are increasingly used in forecasting employment and skills as well as managing people at work (Defélix et al, 2006; Klarsfeld and Oiry, 2003).

In the German dual system, *Beruf*, or occupational identity, is the guiding principle and *Kompetenz* is rooted within this, even if curricula were traditionally defined as learning inputs. In 1996 the German education system adopted an 'action competence' approach, moving from subject (inputs), to competence (outcomes), and specifying curricula in terms of learning fields (*Lernfelder*), rather than occupational knowledge and skills (Straka, 2005). Vocational training curricula are now described in terms of vocational action competence (*Handlungskompetenz*), which specifies domain competence (*Fachkompetenz*), personal competence (*Personalkompetenz*) and social competence (*Sozialekompetenz*). A balance of subject, personal and social competence is the prerequisite for 'work process knowledge and learning competence' (*Methodenkompetenz* and *Lernkompetenz*). The German training system is undergoing a period of reform and the changes are likely to simplify the conceptualisation of competence in qualifications frameworks, but not to abandon it, even if there have been fears that competence-based approaches could threaten the integrity of *Beruf* (Gehmlich, 2009; Straka, 2008).

These different models of competence are unsurprising given the 'varieties of capitalism' (Hall and Soskice, 2001) within Europe. The different competence models reflect fundamental differences in modes of labour market regulation and in training regimes. In terms of labour market regulation, each country has its own specific institutional history but there are broad families such as the Nordic and the Mediterranean groups (Crouch and Streeck, 1997). Alternatively, the different modes of labour market regulation can be considered as a spectrum from forms of concerted regulation in the Euro-zone states to the liberal market regimes of the Anglophone and new member states (Winterton, 2007). In terms of training regimes, the major differences are between those focused on work versus those fo-

cused on school (focus, not locus, so the dual system is regarded as work focused) and those that are state-regulated versus those that are market-led (ibid., 2000). The predominant mainland European state-regulated, school focused system, as in France, is associated with competence models centred on qualifications, while for the state-regulated work focused training regimes like the German dual system, the competence model emphasizes occupational identity. In the market-led work focused training regimes like the UK, the concern is on actual capabilities and the competence model therefore stresses workplace functionality.

Competence-based approaches have been widely criticised for being reductionist: that is to say for attempting to reduce the complexity of work activity to a series of atomised tasks, in the execution of which an individual is required to demonstrate proficiency (Ashworth and Saxton, 1990; Bates, 1995; Lindsay and Stuart, 1997). According to this view, competence represents the ability to undertake isolated functional tasks to some minimum standard, which as Hyland (1997, p. 493) notes, is 'a basic minimum or lowest common denominator sort of concept... which does not signify high levels of achievement.' Mansfield (2004, p. 303) contrasted this narrow view in which 'competent people were those who followed rules and procedures without question – competence meant compliance' – with a broader view that emphasised flexibility, adaptability and the need for individuals to take more responsibility. If the lowest common denominator approach is associated with narrow job tasks and functional competences based on standard operating procedures, the highest common factor approach emphasises a more holistic view of competence for jobs that entail more autonomy and the use of judgement. Several authors have explicitly proposed multi-dimensional approaches more consistent with the German concept of *Beruf*. Hodkinson and Issitt (1995, p. 149) argued for a more holistic approach to competence in the caring professions, integrating knowledge, understanding, values and skills that 'reside within the person who is the practitioner.' Cheetham and Chivers (1996, 1998) developed such a holistic model of professional competence which was subsequently applied in an analysis of the future skills needs of managers in the UK undertaken for the Department for Education and Employment (Winterton et al, 2000). Australia imported a version of the UK functional competence model based on occupational standards, prompting similar debates about the need to construe competence more broadly and to go beyond narrow functional tasks (Hager and Gonczi, 1996).

A related criticism of the NVQ system was that the competent/not yet competent dichotomy fails to take progression into account (Hodkinson, 1992). Experts have been found to display a greater capacity to invoke and refine schemas of interpretation, as well as deeper recognition-triggered reasoning, than novices, who do little more than attempt a literal perceptual interpretation. While innate abilities

are important in the development of expertise, the special characteristics that define expertise are usually specific to that domain, suggesting that practice is more important, although certain characteristics appear to apply to experts in a range of domains. Conceptual competences, including both cognitive and meta-competences are often associated with higher level jobs involving more responsibility, although there is evidence that all workers become more effective when they reflect on their actions at work. Elliott Jacques devised a measure of the level of work roles in terms of the 'time-span of discretion' (the longest targeted completion time for any of the tasks assigned), which he proposed as an alternative to job evaluation techniques (Jacques, 1956, 1994).

Intellectual capabilities are required to develop knowledge and knowledge is operationalized in developing skills. These, coupled with other social and attitudinal factors are prerequisites to developing competence in a work context. An influential generic taxonomy, developed by Bloom and colleagues for use in educational establishments, distinguished three domains of educational activities: cognitive; affective; and psychomotor (Bloom et al., 1964). The cognitive domain relates to mental skills (knowledge), the affective domain for growth in feelings or emotional areas (attitudes), while the psychomotor domain is concerned with manual or physical skills (skills). This taxonomy is very influential in the training world and trainers frequently refer to these as KSA (knowledge, skills and attitudes). Arguably, the taxonomy should have stressed behaviours as the output of attitudes, just as knowledge is the output of intelligence and skill is an output of dexterity, for example, but the KSA terminology is now thoroughly embedded. Incidentally, Bloom's taxonomy strongly influenced the development of the Irish Qualifications Framework.

One of the defining features of competence-based approaches is the emphasis on the work context: even if competence in terms of potential can be considered outside the work context, occupational competence can clearly only be demonstrated in a work setting. Interestingly, in Lithuanian there are two different terms for these 'input' and 'output' competences: *kompetencija* is the potential capabilities of a person to perform certain functions, while *kompetetingumas* is demonstrated competence through performance in the work context (Laužackas et al, 2009). Canning (1990) proposed a more pragmatic context-specific approach to competence based on good practice while Fischer et al, (1993, p. 113), noted that 'people do not have competences independent of context.' Abstract, overly narrow and simplified descriptions of competence inevitably fail adequately to reflect the complexity of competence in work performance (Attewell, 1990; Norris, 1991; Sandberg, 1994). Alternative interpretative approaches, derived from phenomenology, view competence as governed by the context in which it is applied: 'worker and work form one entity through lived experience of work' (Sandberg, 2000a, p. 50), so competence

is constituted by the meaning that the work has for the worker in their experience (Dall'Alba and Sandberg, 1996; Sandberg, 2000b; Stoof et al, 2002). Interpretative studies, for example with pilots (Dreyfus and Dreyfus, 1986), nurses (Benner, 1984) and police officers (Fielding, 1988a, 1988b), have demonstrated that attributes acquire context-dependency through individuals' experience of work. One of the advantages of the interpretative approach is in acknowledging workers' tacit knowledge and skills (Polanyi, 1966), which can be overlooked if competence is treated as context-free, because the way people work in practice seldom accords with the formal job description. Indeed, given the importance of experiential learning in knowledge transfer, tacit knowledge and skills constitute a major reason for adopting a competence-based approach (Bjørnåvold, 2000; Collardyn and Bjørnåvold, 2004).

Competence as a Policy Imperative

The need for continuous updating of knowledge and skills became apparent with the increasing emphasis on knowledge work and the accelerating pace of change (Hayes et al., 1988). Moreover, recurrent skills mismatches and insufficient labour mobility suggested that formal education and training were failing to meet labour market needs (Crouch et al., 1999). Towards the end of the last century a global policy consensus emerged on the need to adopt competence-based approaches to training and curricula designed in terms of learning outcomes in education. The objectives were to make education and training more relevant to the needs of the labour market; to promote labour mobility through establishing a common framework for understanding the competences that underlie different qualifications; and to increase permeability between VET and HE. International organizations like the International Labour Organization (ILO) and the Organization for Economic Co-operation and Development (OECD) promoted these approaches in major policy initiatives. The ILO drew attention to the diversity of approaches to competence-based training around the world and noted that this limited the possibilities for developing global approaches (ILO, 1997). The OECD initiated the Definition and Selection of Competencies (DeSeCo), project concerned with competence-based education with objective of developing 'a theoretically grounded conceptual framework for understanding the skills and competencies' considered key to modern life (OECD, 1999). Whereas the ILO focus has been mostly on training and the world of work, the OECD has been more concerned with education. The different approaches to competence reflect tensions found in most countries between the

Ministries of Labour and Education. Both approaches have had a major influence over the policies developed by regional organisations like the EU and APEC (Asia Pacific Economic Cooperation) (Gonczi, 2006).

Within Europe, reform of education and training was viewed as an essential requirement to support competitiveness objectives, by making education and training more responsive to labour market needs and by promoting labour mobility. The European Employment Strategy (EES) launched at the Luxembourg Summit in November 1997 put much emphasis on measures to improve employability and adaptability through developing the competences of the working population (European Council, 1997). The Lisbon Summit in March 2000 (*ibid.*, 2000) established the key objective of making Europe *by 2010* ‘the most competitive and knowledge-based economy in the world capable of sustainable growth and better jobs and greater social cohesion.’ In pursuit of this high skills agenda, the Commission published an *Action Plan for Skills and Mobility* in February 2002, emphasizing the need to increase occupational mobility of workers from the poorer regions to those of the wealthier regions of the EU (EC, 2002a). Lisbon marked the origins of a new European policy framework for education and training, establishing targets and benchmarks against which progress was to be assessed and linking these with the EES and policy initiatives on Lifelong Learning. The Lisbon summit also called for ‘reflection on concrete future objectives of education systems focusing on common concerns and priorities while respecting national diversity’. After consulting Member States, the Commission produced a report in January 2001, which proposed means for raising the standard of learning in line with the Lisbon objectives (CEDEFOP, 2003). Following the development of supporting lifelong learning initiatives, the Barcelona summit (March 2002) set the further objective of making European education and training systems a world quality reference by 2010 (EC, 2002b).

The Directors-General for VET in their autumn 2001 Bruges meeting agreed on further efforts to enhance European-wide cooperation and in the Copenhagen Declaration (2002) announced a strategy to support the development of qualifications and competences at European level. As part of these further efforts to increase transparency in VET, a strategy to support the development of qualifications and competences at European level was proposed through a sectoral approach, including European sectoral social dialogue. The Copenhagen Declaration also gave a commitment to develop a European Credit Transfer System for VET (ECVET) and in November 2002 a Technical Working Group (TWG) was established by the European Commission to develop the principles. The parallel European Credit Transfer Systems (ECTS) for HE, had been extended to all Member States under the Bologna Declaration (1999) but was based on notional workload input rather than

competence which was seen as more appropriate for VET (EC, 2003; Winterton, 2005). The secretariat for the TWG was provided by CEDEFOP (*Centre Européen de Développement de Formation Professionnelle*), who commissioned three pieces of underpinning research to design the ECVET architecture. A team from Kassel University was engaged to propose elements of a credit transfer system (Le Mouillour, 2005); colleagues at the Qualifications and Curriculum Authority in London designed the vertical dimension of reference levels (Coles and Oats, 2005); and the team at Toulouse Business School developed the horizontal dimension in terms of a typology of knowledge, skills and competence (Winterton et al., 2006). From the recommendations of these three studies, the ECVET system was designed and adopted at the Maastricht summit on 14 December 2004.

The competence typology for ECVET had to accommodate diverse competence models and be sufficiently comprehensive to capture different aspects of competence in a real work context. Our review demonstrated the growing influence of multi-dimensional frameworks of competence and our proposals identified four analytically distinct sets of competences as a way of reconciling the three main European competence models (Winterton et al., 2006). We recommended that ECVET adopt the terminology of cognitive competence, functional competence and social competence for analytical precision, arguing that wherever competence is used without an adjective it should be understood as an umbrella term including all three dimensions (plus the facilitating meta-competences) in a work context. Elsewhere (Le Deist and Winterton, 2005), we represented this model as a tetrahedron, with meta-competence at the apex, both contributing to and arising from the development of cognitive, functional and social competences. The solid was chosen as a way of emphasising the holistic nature of competence, in a *Beruf* sense: occupational competence resides inside the tetrahedron. The four sets of competences were viewed as analytically distinct although in practice competence statements would involve elements of each dimension. The logic of separating these dimensions was to ensure that competence statements capture all dimensions relevant to the execution of work tasks.

Rather than adopting our recommendations, the TWG decided to retain the terms 'knowledge, skills and competences' from the original remit, subsuming meta-competences under 'competences', leading to the confusion that competence was an umbrella term, a dimension and, in the sense of meta-competence, a sub-dimension. In the Commission note issued in December 2004 (EC, 2004), which formed the basis for the proposals for ECVET accepted at the Maastricht summit, the phrase 'knowledge, skills and competences' was employed without further elaboration, as it was in the ECVET documentation prepared for the consultation exercise between October 2006 and March 2007.

While the ECVET development was underway, the Berlin Communiqué (2003) recommended the introduction of learning outcomes in HE, rather than simply notional workload time, and encouraged Member States: to elaborate a framework of comparable and compatible qualifications for their higher education systems, which should seek to describe qualifications in terms of workload, level, learning outcomes, competences and profile. They also undertake to elaborate an overarching framework of qualifications for the European Higher Education Area. Ministers call those working on qualifications frameworks to encompass the wide range of flexible learning paths, opportunities and techniques and to make appropriate use of credits. (TWG, 2003, p. 4).

To develop proposals for a European Qualifications Framework (EQF) the Commission convened an Expert Group, which retained knowledge and skills in their typology but replaced competence with 'personal and professional competence'. Personal and professional competence was further subdivided into four categories: autonomy and responsibility; learning competence; communication and social competence; and professional and vocational competence. These sub-categories were evidence of further conceptual confusion. Autonomy and responsibility are characteristics of a work situation, not an individual, although a person would need certain competences to be able to exercise responsibility and autonomy. Professional and vocational competence is normally used as an umbrella concept incorporating all the knowledge, skills and behaviours associated with an occupation. A conference in Budapest in February 2006 convened to validate the EQF proposals reiterated the central importance of competence, defined as 'learning outcomes in context' (Markowitsch and Loumi-Messerer, 2008. p. 38). In response, the Commission invited another expert group to redesign the descriptors and this group abandoned competence in favour of 'learning outcomes', which was seen as wider in encompassing knowledge of a non-applied nature and in distinguishing three types of learning outcomes: knowledge; skills; and responsibility and autonomy, under which there was a move to subsume 'competence'. A further TWG was established in May 2006 with representatives of the member states, who rejected this problematic third dimension, replacing it with competence, but retaining in brackets 'responsibility and autonomy'.

Following major EU enlargement in May 2004, a mid-term assessment of the Lisbon Strategy by the high-level group led by Wim Kok (2004) had found progress on growth, productivity and employment disappointing and recommended a revised strategy. The Lisbon Strategy was subsequently re-launched with the objective of fostering 'stronger and lasting growth and the creation of more and better jobs' through measures to encourage firms and workers to adapt to change (EC, 2005a, p. 1). Among the key actions were increasing adaptability and flexibility to enable

Europe to adjust to restructuring and market changes; simplifying mutual recognition of qualifications to facilitate labour mobility; and investing more in human capital by improving education and skills. In November 2005, following the relaunch of the Lisbon strategy, the Commission proposed in the context of the Education and Training 2010 work programme a framework of *Key Competences for Lifelong Learning* (ibid., 2005b). In this proposal, which included in annex a European Reference Framework developed by a Working Group on Basic Skills, competence was defined as ‘a combination of knowledge, skills and attitudes appropriate to a particular situation’, while key competences were identified as ‘those that support personal fulfilment, social inclusion, active citizenship and employment.’

The revised Lisbon Strategy was overtaken by the 2008 financial crisis, to which the Commission responded with *A European Economic Recovery Plan* (ibid., 2008a). The Recovery Plan outlined four strategic aims: to stimulate demand and boost consumer confidence; to lessen the human cost of the economic downturn and its impact on the most vulnerable; to ensure that when growth returns the European economy is in tune with the demands of competitiveness as outlined in the Lisbon Strategy; and to accelerate the shift towards a low carbon economy, thereby contributing to combating climate change, creating new ‘green-collar’ jobs and reducing Europe’s dependence on foreign energy. The training and development implications were elaborated the following month in the *New Skills for New Jobs* (ibid., 2008b) initiative, which reiterated the need to enhance human capital and employability but also noted that the severity of the financial crisis had increased unpredictability of the world economy making it essential to ensure a better matching of skills supply to labour market demand.

New Skills for New Jobs was designed to anticipate future skills needs; to develop strategies to raise the overall skill level of the European labour force; and to reduce skills mismatches in the European economy. The expert group supporting this initiative recommended a T-shaped competence profile where transversal skills (the horizontal bar) are combined with job-specific skills (the vertical bar). Presenting interim findings in November 2010, the *Transferable Skills* project noted the continued absence of an agreed competence model at EU level and adopted the knowledge, skills and attitudes model of the European framework for *Key Competences for Lifelong Learning* (European Communities, 2007) with the addition of individual ‘characteristics’ (inborn or acquired psycho-social characteristics, talent, psychical and physical features), thereby confusing ‘input’ characteristics with ‘output’ competence.

By 2010 it was evident that the centre of gravity of the global economy was undergoing a major transformation with the growing economic strength of the BRIC countries, particularly China and India (O’Neill and Stupnytska, 2009), as well as

increasing evidence of the need for radical action to combat the effects of climate change. In response, the Brussels Summit in March 2010 endorsed *Europe 2020*, a new strategy for sustainable growth and jobs, putting knowledge, innovation and green growth at the heart of EU competitiveness (ibid., 2010a). Described as a comprehensive roadmap for the EU's economic recovery, sustainability in both a competitive and environmental sense is added to the original goals of growth based on knowledge and innovation coupled with high employment and social cohesion.

A ministerial meeting in Bruges in December 2010 to consider strategic priorities in the Copenhagen process emphasized the key role of VET in supporting the aims of *Europe 2020* by providing relevant, high quality skills and competences (Bruges Communiqué, 2010). The Council of the European Union endorsed this view in March 2011, concluding that:

Education and training have a fundamental role to play in achieving the 'Europe 2020' objectives of smart, sustainable and inclusive growth, notably by equipping citizens with the skills and competences which the European economy and European society need in order to remain competitive and innovative, but also by helping to promote social cohesion and inclusion (Council of the EU, 2011).

The Council conclusions noted the particular relevance of two of the proposed *Europe 2020* 'flagship' initiatives. The *Agenda for New Skills and Jobs* initiative (EC, 2010b), designed to upgrade skills and boost employability, proposed measures to improve the identification of training needs, make education and training more relevant to labour market needs, and facilitate access to opportunities for lifelong learning and guidance, as well as improving transitions between education, training and employment. The adoption of qualifications based on learning outcomes and greater validation of skills and competences acquired experientially in non-formal and informal contexts were also emphasized for their contribution to enhancing employability. The *Youth on the Move* initiative (EC, 2010c), designed to help young people achieve their full potential and thereby improve their employment prospects, focuses on reducing drop-out from school, ensuring all young people acquire basic skills to facilitate further learning and increasing opportunities to learn later in life. In addition, the initiative is concerned to improve the quality and relevance of higher education, increase diversity in intake and enhance workplace and overseas learning opportunities.

Competence in Practice

European approaches are generally more concerned with the knowledge, skills and behaviours for a particular job context than with personal characteristics,

the HayMcBer approach to competence was exported to Europe from the USA and continues to influence practice in organizations. One survey in the UK suggested that the American approach was more widely adopted than the competence approach based on occupational standards (Miller et al, 2001) although a more recent study undertaken by Stratagia Ltd for the UK Qualifications and Curriculum Development Agency found that the majority of respondents, from Awarding Organisations, Sector Skills Councils and other stakeholder bodies, preferred the typology we proposed for ECVET for its practical relevance (Stratagia Ltd, 2010, p. 10). In the USA there is similar diversity in practice and competence is most often construed in terms of job activities as well as individual characteristics (Athey and Orth, 1999; Dubois and Rothwell, 2004). The O*NET database, for example, includes in its content model of occupational information both occupational features (job-oriented descriptors) and person characteristics (worker-oriented descriptors). While the job-oriented descriptors (job characteristics, activities and tasks), define the requisite mix of knowledge, skills, and abilities, the worker-oriented descriptors are concerned with 'enduring characteristics that may influence both work performance and the capacity to acquire knowledge and skills required for effective work performance.'

In practice, at the organisational level there is even more diversity in approaches to competence than the review of country models suggests. Since the 1990s attention has focused on 'core competence' (Prahalad and Hamel, 1990) with the aim of securing sustained competitive advantage derived from a firm's internal resources (Cappelli and Crocker-Hefter, 1996; Hall, 1992). Various descriptions include 'human capital' (Ireland and Hitt, 1999) and 'internal assets' (McCune, 1999) core competence comprises the knowledge, skills and experience of the entire workforce. Organisations become 'repositories and coordinators of intellect' (Quinn, 1992) employing principles of 'knowledge management' (Nonaka, 1991), which has almost certainly been practised since ancient times even if the concept lacked a name, rather like competence. The preoccupation of management in this context becomes developing and maintaining core competence (Campbell and Sommers Luchs, 1997; Mitrani et al., 1992) and 'managing intellect' (Quinn et al., 1996). The virtue of the core competence approach is that it 'recognises the complex interaction of people, skills and technologies that drives firm performance and addresses the importance of learning and path dependency in its evolution' (Scarborough, 1998, p. 229). Paradoxically, the focus on core organizational competence often neglects the competence of individuals (Nordhaug, 1993, p. 80). This neglect is all the more serious because most knowledge inside organizations is tacit knowledge, residing inside individuals and seldom being made explicit or codified. Maximising the return on core competence depends upon 'leveraging knowledge' (Thurbin, 1995)

and tacit competences, including those of so-called 'unskilled workers' (Kusterer, 1978), can have a determining impact on the success of an enterprise (Flanagan et al., 1993). This need to harness 'every ounce of intelligence' within the workforce in an unpredictable, competitive environment was recognised much earlier by Japanese industrialists like Konsuke Matsushita when Western enterprises were still wedded to Taylorist production methods (Molander and Winterton, 1994, p. 147). Nissan enabled greater task discretion in flexible teams focussed on product quality (Wickens, 1987), pioneering the idea of adaptable organizations able to respond more rapidly to external changes (Morgan, 1997). Nonaka and Takeuchi (1995) explained why Japanese companies were so successful in continuous innovation, developing a model of the 'knowledge-creating company' in which knowledge conversion arises through an iterative spiral process of socialization, externalization, combination and internalization. Tacit knowledge is shared through social networks, leading to clusters of expertise at regional level (Storper and Scott, 2009).

In this context, the value of developing a consensus definition of competence across Europe has been widely recognised (Brockmann et al, 2009; Garavan and McGuire, 2001) yet despite progress made with the ECVET and EQF initiatives, 'a convincing transparency of vocational competences has yet to be developed.' (Markowitsch et al., 2008, p. 171). An overarching common framework of competences is, however, essential to permit transnational and sectoral comparisons as well as to promote permeability between VET and HE. In addition to the persistence of differences in national competence models, it is clear that competence is interpreted differently across sectors and between VET and HE. Moreover, different conceptions of competence are also apparent in the various EU instruments, which both limits the effectiveness of articulation between these instruments and confuses practitioners and policy makers that are expected to use them.

The EQF, formally adopted by the European Parliament on 23 April 2008, was designed to offer a facilitating framework for mapping qualifications (European Communities, 2008) using knowledge, skills and competence descriptors. In the EQF, knowledge is described as 'theoretical and/or factual knowledge', skills as 'cognitive skills (use of logical, intuitive and creative thinking) and practical skills (involving manual dexterity and use of methods, materials, tools and instruments), and competence is described 'in the sense of the assumption of responsibility and autonomy' (Sellin, 2008, p. 15). Most countries are in the process of aligning their NQF with the EQF (Hanf and Rein, 2008; Hozjan, 2008; Tierney and Clarke, 2008; Tütlys and Winterton, 2006), but difficulties have been encountered arising from differences in national competence models (Bohlinger, 2008). Markowitsch and Loumi-Messerer (2008, p. 53) explain the confusion surrounding the use of competence in the EQF by distinguishing three implicit hierarchies: an educational (or systemic knowledge)

hierarchy; an occupational (or competence) hierarchy; and a skills (or individual attributes) hierarchy. Through the lens of each hierarchy, the EQF takes a different aspect. Part of the difficulty derives from a misconception as to what the EQF is designed to achieve: 'the EQF is not a competence framework... [but] a framework based on learning outcomes, whose descriptors describe all forms of learning outcomes.' (Markowitsch and Loumi-Messerer, 2008, p. 42).

Competence-based occupational profiles and/or national qualifications frameworks (NQFs) already exist or are under development throughout Europe and most countries adopted learning outcomes and competence-based qualifications. The ECTS in HE was originally based on the assumed equivalence of Bachelor, Master and Doctoral programmes and was associated with notional learning time (input). The implication of the Berlin Communiqué was that HE would have to adopt a learning outcomes (output) approach. This effectively stimulated the adoption of outcome based curricula common to HE and VET. Arnold and Pätzold (2008, p. 335 et seqq.) noted that in the past VET had a 'supply orientation' with the aim of complete preparation for an occupation with a clearly defined profile and widely established standards and curricula. The modern approach, they characterized as a 'demand orientation', where the emphasis is on lifelong learning to develop cross-occupational content and key competences designed to meet the demands of enterprises of the region.

Rauner (2008, p. 365) describes how task analysis methods of curriculum development were used in Bremen to replace discipline-based training plans with others based on developmental theory using the concept of work process knowledge, defined as including the 'practical, theoretical, action-governing and explaining knowledge.' Work process knowledge appears key to understanding the interaction between learning outside and inside the work context and the integration of theory and practice (Fischer et al, 2004). Blings and Spöttl (2008) similarly argue for a bottom-up approach developing European occupational profiles from empirical analysis of work processes. Projects in the Leonardo da Vinci Programme have provided a platform for the last 15 years by developing new European-level qualifications, and more recently through ECVET and EQF pilots and testing. Occupational profiles reflect the actual tasks undertaken in specific jobs and these are sometimes highly comparable between countries but this is no guarantee of inter-sectoral and international comparability.

Learning outcomes are defined in the EQF as 'statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined as knowledge, skills and competences.' European policy encouraged the shift to learning outcomes, provided the conceptual underpinnings (CEDEFOP, 2008a) and argued that the move was important for assuring the quality of VET

provision (ibid., 2008b). Uptake in terms of policies and practices was far from uniform, however (ibid., 2009). Krichewsky, Frommberger and Milolaza (2010) found differences in the extent to which learning outcomes had been introduced in VET curricula, and in the way that learning outcomes are defined and operationalized. At a political level curricula define the overarching goals of VET, at an administrative level they define the expected KSC as defined in qualifications standards and at the practical pedagogical level they define the content, learning place, timetable, teaching methods and learning programmes. Input-oriented curricula are based on the technical/scientific knowledge assumed to be required to undertake a work task, whereas output-based curricula are based on analysis of work. Therefore the input approach separates theory and practice whereas in the outcomes approach experiential learning involves the integration of theory and practice.

Markowitsch and Luomi-Messerer (2008, p. 41) viewed learning outcomes as more comprehensive than competence, since the latter depends on the work context while the former can exist independently of the work context. Such inert knowledge, to use Polanyi's terminology, has no corresponding practical competence, so 'the debate on whether the qualifications framework should be based on learning outcomes or competences could actually also be interpreted as a debate on the status of inert knowledge.' (ibid). This pursuit of inert knowledge is robustly defended by the educationalists, most elegantly and eloquently by Michael Young (2007), but accepting this principle does not negate the arguments in favour of competence-based *elements* of the curriculum to increase labour market relevance. Indeed give the uncertainties concerning what competences are needed for the future it is difficult to say that any knowledge is devoid of labour market relevance (without introducing the obvious example of teaching the same inert knowledge to the next generation). In a CEDEFOP briefing note on the EQF, Bjørnåvold and Coles corroborate the interpretation of Markowitsch and Luomi-Messerer and offer some useful clarification:

Some people prefer to use the term competence-based qualifications when referring to qualifications that are described in terms of learning outcomes. The concept of competence has wide application in defining performance and certainly in vocational education and training it is a critically important and central concept. Competence-based qualifications take into account the influence of the learning (or working) context when learning outcomes are defined and assessed. This context has a strong influence on the range of learning outcomes that are considered important, the interaction between them, the way the learner learns, how the outcomes are assessed and, most importantly, the value attached to qualifications in the field. Competence-based qualifications are fundamentally a statement that a person is qualified to work in the field. Some formulations of learning outcomes may not be able to satisfy this requirement for contextual specification. For this reason it is important that in qualifications

frameworks we can define levels in terms of expected learning outcomes when these outcomes are achieved by a person in certain conditions. (2009, p. 11 et seq.)

In March 2009 an Expert Group was established to propose ways of developing the *New Skills for New Jobs* initiative in the context of Europe 2020. Their report, published in February 2010, demonstrates continued confusion surrounding the EQF, with a surrealist definition in which skill appears first as an overarching generic term, second as a subset of itself and third as a dimension of competence:

Throughout this report, the term 'skill' subsumes knowledge, skill and competence defined in the European Qualifications Framework, where 'skills' means the ability to apply knowledge and use know-how to complete tasks and solve problems, and 'competence' means the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development. (EU, 2010, p. 4).

Markowitsch and Plaimauer (2009) argued the need to develop a truly standardized international standard classification for skills and competences facilitating recognition of qualifications not only across Europe but on a global basis through reconciling the findings of the European project DISCO (Dictionary of Skills and Competences), O*NET and Swedish Taxonomy DB frameworks. Their proposal appears to have had a major influence on recent European policy. One of the key deliverables of the *New Skills for New Jobs* initiative was to create a European level 'multilingual dictionary linking skills and competencies to occupations' (EC, 2010d). In the preamble to the document proposing ESCO (European Skills, Competences and Occupations taxonomy), the Commission argued that 'skills, competencies and capabilities complement formal qualification-based approaches in dialogues with employers'.

The ESCO taxonomy has the aim of linking the EQF to occupational groups as defined by the ILO International Standard Classification of Occupations (ISCO), yet instead of using the EQF terminology of 'knowledge, skills and competences', it introduced further confusion with 'skills, competencies and capabilities'. In suggesting that 'skills, competencies and capabilities complement formal qualification-based approaches' it also neglects the role of qualifications as the formal certification of competence. A stakeholders' conference in Brussels on 17–18 March 2010 resolved some of these anomalies and focused on the objective of creating 'a common language between education/training and the world of work.' A subsequent description of work in progress on ESCO referred to 'skills and competences' as the link between on the one side occupations and the labour market and on the other side qualifications and education/training (EC, 2010e). Expanding the scope to include qualifications, ESCO henceforth became the European taxonomy of Skills, Compe-

tences, qualifications and Occupations. The development of ESCO has subsequently drawn on classifications already in use through the EU job mobility portal, EURES, and the research undertaken by the project DISCO.

Independently of the ESCO initiative, an ad hoc expert group was convened in May and June 2010 to draft guidelines for developing a common understanding of how competence can be interpreted across these different instruments. This work was intended to inform a Commission Communication in early 2011, but at the time of writing (July 2011) nothing yet appears to have been published. If a common understanding of competence is to be developed, it must be theoretically grounded and needs to reconcile Bloom's taxonomy, Jacques's time-span of discretion and the Dreyfus ladder of professional expertise. The three principal competence dimensions we proposed for ECVET were reasonably consistent with Bloom's taxonomy of learning (Winterton et al., 2006). Jacques's categorisation of levels of jobs in terms of responsibility influenced the determination of reference levels for ECVET (Coles and Oates, 2005). Markowitsch and Loumi-Messerer (2008) proposed new groups of 'competencies' based on work-related tasks and contexts, mapping these to the Dreyfus ladder of professional expertise. These three approaches are overlapping and do not appear to correspond neatly with the three hierarchies of the EQF identified by Markowitsch and Loumi-Messerer.

There is scope for optimism that ESCO can provide a conceptually sound framework capable of transcending sector and national specificities. Until such a framework exists, the *Europe 2020* objectives of global competitiveness driven by high skills will remain no more than an elusive policy ambition.

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Potentials for Change in Education and Training through Interactions between Credit Systems and Qualifications Frameworks

Isabelle Le Mouillour

Introduction

The European Education and Training is organised at policy level along two major processes: The Copenhagen process (2002), which led in 2010 to the strategic framework for European cooperation in education and training ('ET 2020') aiming at a strategy for smart, sustainable and inclusive growth (Council of the European Union, 2009), and the Bologna Process (1999) to promote the European higher education system. Both processes aim at modernising education and training and gave rise to two credit systems (European Credit Transfer System – ECTS; European Credit System for Vocational Education and Training – ECVET) and two qualifications frameworks (European Qualifications Framework for lifelong learning – EQF; European Higher Education Area Qualifications framework – EHEA Framework or Bologna Framework). Credit systems and qualifications frameworks follow similar objectives among which transparency of qualifications, transnational mobility of learners and permeability in education and training systems, smooth access to qualifications, even though they are anchored in different governance patterns and traditions. Insufficient transparency of qualifications obtained and offered as well as inadequate recognition and crediting mechanisms discourage individuals from continuous participation in education and training, and make it difficult for companies to gain insight in the range of qualifications available. The European qualifications frameworks and credit systems are meant to function as neutral, outcomes-oriented reference frames, operating at macro-level, facilitating the cooperation and understanding of qualifications between Member States.

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Qualifications frameworks developments raise great expectations; the empirical data to assess their impact remains weak and drained by advocacy rather than hard evidence. Furthermore national qualifications frameworks and credit systems remain a recent event in European educational history. This contribution focuses on interrelationships between credit systems and qualifications frameworks for education and training in Europe. It establishes and discusses links with qualifications policies and governance issues looking at different national cases. It attempts to raise awareness on pitfalls based upon the assumption that qualifications frameworks and credit systems are not neutral to education and training in Europe.

The Development of Credit Systems and Qualifications Frameworks

Credit systems and qualifications frameworks are developing as part of the European social, societal and economic context. The Bologna and Copenhagen processes have led to agreements among meanwhile 46 and 32 countries respectively on key features that would sustain European cooperation in education and training. Both processes contain a set of shared objectives, the most important are lifelong learning, competitiveness but also transparency of qualifications/programmes and mobility (understood as geographical and professional mobility). Lifelong learning is embedded in the European social model and its complementarities to the labour market and management at companies' level (Commission of the European Communities, 2001); the strategy for 2020 is for a 'smart, sustainable and inclusive economy delivering high levels of employment, productivity and social cohesion' (European Commission, 2010). The strategy 2020 sets as benchmark (which concerns both VET and HE) that at least 40% of the younger generation should complete a tertiary degree. 77 million Europeans aged 25–64 (close to 30%) still have at most lower secondary educations (Council of the European Union, 2009). Currently, around 10% of adults have participated in lifelong learning within a four weeks period (benchmark of 15% by 2020). In Europe, the policy debate is dominated by questions of skills mismatch on the labour market, the development of key competences by graduates (of all education levels), employability and the adequacy between E&T and labour market. The occupational structure of Europe is moving towards knowledge and skill-intensive jobs: The share of jobs requiring high-level qualifications will rise from 29% in 2010 to around 35% in 2020, while the number of jobs employing those with low qualifications will fall from 20% to 15% (Le Mouillour et al., 2011). If participation rates in education and training do not rise,

the number of younger people in VET at upper, post-secondary and tertiary levels (ISCED 3 to 5) will decrease by more than 2 million between 2005 and 2030 (Lipinska et al., 2007). The labour markets will increasingly depend on older workers, women re-entering the labour market and migrants. Both trends underline the growing attention paid to the right skills mix for European competitiveness and to tertiary level qualifications.

Various European initiatives and instruments have been developed to increase transparency, recognition and portability of qualifications across institutional, sectoral and national borders. Those initiatives are often mirrored and interwoven with changes in national systems, as in the case of the development of validation mechanisms in Member States. They are also linked to changes in the role of qualifications which are increasingly in focus of both Bologna and Copenhagen processes, potentially leading to a better interface between higher education and VET. 'Pressures for change that operate on qualifications (and systems) are diverse and generally increasing in intensity. The economic pressure is strongest, especially in terms of VET qualifications but also for higher education qualifications. Pressures for the inclusion of individuals in education and training are evident as are pressures to maintain an objective basis for the standards on which qualifications are based' (CEDEFOP, 2010a, p. 219). In Europe, the process of awarding VET qualifications is changing. There is a more prominent role for labour market information (flows, returns, occupational standards) and greater involvement of social partners. New governance bodies are established in some countries, often to manage qualifications frameworks or new quality assurance arrangements. Some of the new bodies were intended to coordinate VET-related work from definition of occupational standards, stakeholder engagement through to the assessment and certification of learning (CEDEFOP, 2010a). In some countries credit systems were developing and leading to many systemic changes in terms of governance of the qualifications systems, new interfaces with learners and providers as well as shared responsibility for designing and operating credit arrangements.

The way qualifications frameworks and credit systems are taken forward include policy-learning and to some extent policy-borrowing at European and Member States level. Both tools are being tested and piloted as requested by the Communiqués in Bordeaux (2009) and Bruges (2011); progress is being monitored by CEDEFOP. The European Recommendations on EQF (European Parliament and Council, 2008) and ECVET (European Parliament and Council, 2009) define the characteristics of EQF and ECVET, the deadlines for their evaluation, as well as a list of proposals for further developing the tools at national and regional levels. The Bologna process is also characterised by a stock-taking exercise and a common agenda setting. Further to its international expansion and consolidation, the current

priorities within the Bologna Process are emphasised in the European Universities' Charter on Lifelong Learning (EUA, 2008). This charter focuses on 'inclusive and responsive universities', and it includes widening access, providing education and learning to a diversified student population, adapting study programmes to enhance participation and recognising prior learning (among ten commitments).

Credit systems and qualifications frameworks for education and training have evolved in Europe since the 1980's and more intensively after 2000 (see synopsis in Table 1). What seemed to be developing in parallel, following their own 'processes', is meanwhile addressed within a single framework, especially following the decision by the Council on the 'ET 2020', common strategic framework for education and training in 2020 (Council of the European Union, 2009).

Qualifications frameworks and credit systems are developing at European level and operate as 'meta-framework' offering a basis for the understanding of education and training systems between the Member States.

The qualifications framework for the European Higher Education Area (EHEA Framework, set up in 2005) is a milestone of the EHEA: This framework is based on three cycles that correspond to major types of qualification awarded by HE institutions (B.A., M.A., Ph.D.), the levels are described using learning outcomes – based descriptors (knowledge and understanding, applying knowledge and understanding, making judgements, communications skills, learning skills), credit ranges are used for the first two cycles description (Ministry of Science, Technology and Innovation, 2005). These cycles follow a progressive sequence. Countries are not expected to use the EHEA framework in their national contexts but they are required to develop a national qualifications framework by a self-certification process. The resulting degree structure at national levels varies along the disciplines, fields of study and to some extent of a continuation of differentiation between academic and professional qualifications (Eurydice and EACEA, 2009).

The EQF-LLL provides a structure of eight levels based upon learning outcomes descriptors in terms of knowledge, skills and competence. It does not include any credit ranges, and it relies upon the assumption that qualifications can be achieved through different learning pathways (incl. on the basis of validation of informal and non-formal learning). In Europe, 28 countries are developing or have developed comprehensive national qualifications frameworks covering all types and levels of qualifications, in most cases the frameworks more or less adapting and adopting the EQF model. As mid of 2011, 14 frameworks have been formally adopted mainly by Ministerial Decisions, Amendments to existing education and training laws or separate NQF laws (CEDEFOP, 2011).

Almost all Bologna countries have introduced ECTS in higher education, many countries have introduced or are currently developing credit arrangements into

Table 1 Synopsis of credit systems and qualifications frameworks developments (Source: adapted from CEDEFOP (2010b))

Vocational Education and Training Copenhagen process	Time-line	Higher Education Bologna process
ECVET & EQF for LLL		ECTS & EHEA Framework
	1989–1995	ECTS pilot initiative as part of the Erasmus programme
	1995–1999	Implementation of ECTS as one of the action lines of the Erasmus sub-programme of Socrates
	1998	Sorbonne Declaration (four countries)
	1999	Bologna Declaration (30 countries) promotes a HE system based on two main cycles and use of credit (such as ECTS)
Adoption of the Lisbon Strategy	2000	
	2001	Prague Communiqué – calls for development of a European qualifications framework
Copenhagen declaration calls for a credit transfer system in VET and for improvement of transparency, comparability, transferability and recognition of competences and/or qualifications	2002	Testing and various development initiatives (including the so called Dublin Descriptors, Tuning, Trans-European Evaluation Project)
Development of ECVET – 1st Technical working group – including a proposal for a structure of eight qualifications reference levels	2003	Erasmus University Charter requires institutions participating in Erasmus to have a credit transfer system in place (e.g. ECTS)
	2004	
	2005	Bergen Communiqué – Adoption of the EHEA Framework based on three cycles and commitment to develop NQFs call for using credit not only for transfer but also for accumulation

Table 1 (continued)

Vocational Education and Training Copenhagen process	Time- line	Higher Education Bologna process
ECVET & EQF for LLL		ECTS & EHEA Framework
Public Consultation on ECVET	2006 2007	Development of NQFs Self-referencing to EHEA Framework
Commission proposal for ECVET Adoption of EQF European Recommendation	2008	
Adoption of ECVET European Recommendation Testing and referencing to the EQF	2009	
Common strategic framework for education and training towards 2020		
ECVET testing and progressive implementation	2010	
Countries are progressing in referencing their NQFs/NQS to EQF	2011	
Countries should create conditions for gradual implemen- tation of ECVET All new qualification documents should contain reference to EQF level	2012	Self-certification to the EHEA framework should be com- pleted (based on Leuven Communiqué – 2009)
Report to the Parliament on EQF implementation	2013	
Report to the Parliament on ECVET implementation	2014	

Table 2 Credit systems and qualifications frameworks in selected countries (Source: CEDEFOP (2010b))

	Qualifications frameworks	Credit systems
Finland	Development of a comprehensive NQF 2005 establishment of QF for HE	Since 2005 legislation on ECTS in HE In VET definition of units, credit convention Since 2004 national ECVET initiative
France	1969 (revised 2002) setting up of a national classification of qualifications	Introduction of ECTS in 2002 Definition of units in VET, and accumulation
Germany	2005 establishment of QF for HE Since 2007 development of comprehensive NQF	2005 structural guidelines for use of ECTS in HE Since 2008 national ECVET initiative
Slovenia	Development of a comprehensive NQF 2006 adoption of a classification system of education and training	Since 2004 use of ECTS in HE Since 2006 credit point convention for upper secondary VET and NVQ
Spain	Development of NQF for lifelong learning Development of QF for HE	ECTS in use since 2003 VET qualifications are based on units, accumulation
UK-EWNI	Adoption in 2008 of a jointly regulated credit and qualifications framework	
	Since 2001 framework for HE qualifications	
UK-Scotland	Since 2001 credit and qualifications framework for all qualifications based on three sub-frameworks and credit systems	

their qualifications systems as in the case, for instance, in Belgium [Flemish Community], Denmark, Sweden, Spain and Scotland; further countries examples are presented in Table 2. However impact is hampered by different understandings and inconsistent implementation between countries and institutions and ECTS implementation varies much (Eurydice and EACEA, 2009).

Most qualifications systems in Europe show a high level of ECVET readiness (Fietz et al., 2007). ECVET readiness is related to the structure of qualifications (units and/or partial qualifications might be part of the qualifications systems), to the provision of transfer and accumulation mechanisms (for instance validation is

considered as a way to access to qualifications) and to the structure of national qualifications frameworks (some comprehensive frameworks already include credits systems/arrangements and common methodological approaches employing learning outcomes). The situation is diverse across Europe. Following the European Recommendation on ECVET, which foresees a testing of ECVET as credit systems for vocational qualifications, national initiatives and pilot projects are running to assess the feasibility of ECVET (CEDEFOP, 2010c). Some countries already had credit arrangements in education and training. Credit arrangements include mechanisms for the award of qualifications usually based on transfer and accumulation of units of learning outcomes either associated with credit points (United Kingdom, Finland, Sweden, etc.) or without credit points (France, Spain, etc). Credit systems are sometimes developed within a broader qualifications framework (Scottish and Welsh credit and qualifications framework) or designed for specific qualifications (Further Education system in Italy). The UK Qualifications and Credit Framework (QCF) is a government framework applicable in England, Wales and Northern Ireland (EWNI) starts 2011 and sets out that how all regulated vocational qualifications are structured, titled and quality assured. In that context, credit is awarded upon completion of a unit (the smallest component of a qualification) and it can be combined to qualifications, whereby the level indicates the complexity of a qualification (City and Guilds, 2011). Those examples show that qualifications frameworks and credit systems are no neutral instrument to education and training system and explicitly request a change in governance and understanding of qualifications as demonstrated hereafter.

The Links between Credit Systems and Qualifications Frameworks

The two European credit systems for education and training (ECVET and ECTS) are differently linked to qualifications frameworks (resp. EQF and EHEA-QF). ECTS supports identifying the qualifications types (for instance first cycle qualifications such as B.A. are worth 180–240 ECTS credits and located at first level of the EHEA-QF); it also indicates the workload associated to units of teaching and learning. The linkage of that kind does not exist between ECVET and EQF or EHEA-QF: ECVET and EQF are linked upon the use of the learning outcomes approach to qualifications and a qualifications level indication for transfer.

Across Europe very few qualifications and credit frameworks exist. A possible explanation is that qualifications frameworks and credit systems can be as-

signed different roles in relation to flexibility and responsiveness of qualifications systems, learners' motivation, linking labour market and education, opening access to qualifications, assessment procedures, transparency of qualifications, funding and efficiency of qualifications systems, management of qualifications systems. Furthermore credits might be considered as information on qualifications and as currency for transfer and accumulation. This list of expectations towards frameworks and credit arrangements might render difficult to meet the objective of developing 'close links between the European Qualifications Framework and existing or future European systems for credit transfer and accumulation in higher education and vocational education and training, in order to improve citizens' mobility and facilitate the recognition of learning outcomes' (European Parliament and Council, 2008).

Academics and practitioners have elaborated different approaches to characterise qualifications frameworks. A first approach distinguishes between sectoral frameworks (i. e. for single education and training sector), bridging frameworks (i. e. covering all education and training sectors and relating them) and integrating frameworks (i. e. encompassing all sectors in one and linked by a single set of descriptors). Yet another approach distinguishes between descriptive and transformational frameworks: 'A transformational framework takes a proposed future education and training system as its starting point and defines the qualifications it would like to see in a transformed system, without explicit reference to existing provision' (Raffe, 2009, p. 4). Whether a framework is bridging, integrating, descriptive, transformational, or regulatory, will impact on the links between credit systems and frameworks.

The wide ranging effects of credit systems and qualifications frameworks can be understood by looking at them as mechanisms/processes and in their passive/active role (Table 3).

As mechanisms, frameworks operate with levels, referencing criteria and list of qualifications, credit systems would operate with units, credit points as well as accumulation and recognition rules. Both tools thus directly impact on qualifications (the relationships between qualifications in term of levelling or progression routes, their internal structure in terms of units or points). The 'process' perspective hints at the choices whether to include (or not) given qualifications into frameworks, whether to consider experiential learning (or not) but also at the role of different constituencies and regulatory powers of institutions over qualifications. These functions might be more or less tightly linked to the active and passive role of credit systems and qualifications frameworks in qualifications systems. A passive role is synonym to descriptive or explanatory role to stakeholders: for instance the number of credits would give an indication of the size of a unit within a qualification. If the number of credit is the metric and requirement for a given unit, than credit

Table 3 Dimensions of credit systems and qualifications frameworks (Source: CEDEFOP (2010b))

	Functions in qualifications systems		Roles in qualifications systems	
	A mechanism	A process	Active role	Passive role
Qualifications Frameworks	Set of levels Set of referencing procedures for qualifications to frameworks Catalogue(s) of qualifications offered	Includes or excludes certain qualifications (and consequently those awarding them) Empowers or, on contrary, constrains certain organisations	Regulate or influence the way qualifications are designed and awarded using level descriptors Ensure the quality of qualifications 'recognised' through the framework	Describe the relationship between qualifications through a structure of levels. Communicate the range of recognised qualifications offered
Credit systems	Units/modules and related assessment; Credit points Rules to accumulate credit Rules on who can validate and recognise credit	The responsibilities, motivations and willingness of parties concerned (providers, awarding bodies etc.) to practice transfer and to open-up qualifications and programmes.	Set requirements to the qualifications concerning: – their volume/size (credit points) – use units/modules – refer to rules to accumulate credit Empower certain actors to recognise credit	Describe the size of a qualification or its component Describe the relationship between components
Learners' perspective	Related to the learning pathway – enables to construct a pathway and to define entry and exit points	This influences institutional decisions that impact on individuals' learning paths: decides whether they are given access or recognition	Defines the possibilities to construct learning pathways	This enables learners to 'navigate' the system – related to the learning path

systems are taking over a more active or regulatory role. The national referencing reports (of qualifications systems to the EQF) currently discussed show strong elements towards an active role of qualifications frameworks.

Progression and Permeability

Credit systems and qualifications frameworks link conceptually over their functions and roles in relation to qualifications and the institutions governing those qualifications. They are furthermore consequently linked upon their objective of widening access to education and providing progression routes to learners. The CEDEFOP review (CEDEFOP, 2010b) shows that this could include as a first option designing pathways within an education and training sector by clarifying entrance and exit points. Qualifications frameworks provide information on access requirements to qualifications or study programmes; they also indicate how qualifications might be articulated. For instance, the Slovenian Qualifications Framework specifies the typical access 'formal' requirements for qualifications at each level. Within the EHEA Framework, qualifications at the level of the first cycle give access to qualifications at the level of the second cycle (the admission is subjected to further criteria). Several countries (e.g. UK-EWNI, UK-Scotland, Australia) have followed an approach by which learners can enrol in a programme that prepares for more than one level of qualification. The programme can have multiple exit points, which correspond to summative assessments; learners can either decide to pursue their studies and achieve a higher level qualification or to exit and enter the labour market. The second more complex option is to create and establish pathways across education and training sectors. This option links to the reflections on mechanisms and processes, it requires the involvement of various stakeholders, with possibly different approaches to qualifications (for instance holistic vs. modularised) and different orientation of qualifications (for instance general, vocational or academic). The approaches to pathways can be clustered in four categories presented in the following table.

The issue of access to qualifications or programmes might be settled in legislations and not directly linked to the qualifications framework. Further enablers and impediments are often unrelated to qualifications design such as the modes of financing, the level of bureaucracy, the motivation to cooperate by the stakeholders involved and the capacity of competent institutions to enforce the requirements of credit systems and qualifications frameworks and the institutional path-dependency.

Progression and permeability relate to differences existing across countries in the way the volume of learning is appreciated (role of credit points), the requirements to

Table 4 Main approaches to pathways (Source: adapted from CEDEFOP (2010b))

Approaches	Explanation
Shaping regulatory statement on the right to access to qualifications	For instance, in Germany the pathways across the VET sub-systems and from VET to higher education are very diverse. Depending on the VET sub-system (the dual system, technical or VET secondary schools), qualifications from initial VET give access to either only universities of applied sciences (<i>Fachhochschulen</i>) or to certain fields of study in universities. A 2009 decision of the Federal States Ministers' Conference states that in principle any advanced VET qualification (higher level of VET governed by chambers) gives access to higher education
Developing 'bridging qualifications'	For instance, in France, the development of <i>licence professionnelle</i> requires from the universities to reflect on the students' origin (most of them will join after a VET qualification) and include linking elements (content-wise or part of the teaching staffs originate VET providers)
Unifying pathways	<p>In Scotland VET schools and colleges construct curricula using units at different levels and some of which are at higher education level. This example is part of a wider unit-based approach followed within the development of credit systems. It is possible to identify at least:</p> <ul style="list-style-type: none"> • Equivalent units are units that are not identical but broadly comparable and acceptable for exemption. In France the equivalence between units of VET qualifications is established during the qualifications design or review process as part of the work of the tripartite committee • Common units as units that are designed to be components of several qualifications (e.g. Some general education units are the same as those within initial VET qualifications in France, Finland or Slovenia; those also articulate with higher education) <p>Shared units means that those who design the unit put it at the disposal of other awarding bodies to use when designing their qualifications. The QCF database contains units designated as shared or restricted depending if they are 'at disposal' of other awarding bodies</p>
Voluntary arrangements based on demand	Responding to various demands by labour market stakeholders, or following marketing strategies to attract a wider learner population, higher education institutions provide arrangements such as exemption from programmes, design of bridging programmes that are short and enable enrolment in a later phase of the programme or articulation of qualifications and curricula between VET and HE. Much of those are up to the decisions of VET or HE providers.

design qualifications in units and the governance patterns. Those differences require to envisage solutions in terms of conversion or equating mechanisms between credit systems, or to take full advantage of the EQF as a meta-framework enabling to relate qualifications from various systems (see Table 4).

Grasping Qualifications

At European level, the four qualifications frameworks and credit systems are based upon qualifications described in learning outcomes – definitions might be diverging but compatible. Credit arrangements and qualifications frameworks provide means to describe, to understand and also to conceive qualifications existing in national systems in qualitative and quantitative manners:

- Classification of qualifications. Qualifications frameworks operate according to certain criteria (levels based on level descriptors, typically based on learning outcomes) and show how qualifications from different subsystems are related. Credit arrangements enable learning outcomes achieved in different institutions, learning contexts and systems, or over a period of time, to be used cumulatively towards achievement of a qualification. Furthermore the common credit points convention is used to label each qualification with a number of credit points which express the size of the qualification;
- Integration of qualifications. Qualifications frameworks and credit arrangements are integrated to enhance credit transfer and accumulation. This typically means requiring that all qualifications are based on units or modules and that the rules on how these are accumulated and how they can be transferred are specified. It may also be a requirement to specify how a qualification relates to other qualifications in the framework. A framework which integrates credit in this way requires more detailed administration; information about level of learning outcomes and volume of learning, as well as issues such as assessment, need to be verified for each unit/module and not only for each qualification (CEDEFOP, 2010b).

At European level, ‘the EQF level descriptions enable us to reference the levels of the learning outcomes associated with a qualification. The question then arises: how big is the qualification? to reference this, we need measurement, and ‘credit’ is the means of measuring volume of learning. EQF therefore needs a credit metric. This is quite separate from the use of a credit system for accumulation and

transfer' (Raffe, 2005, p. 14). This quote is elaborating on different assignments to credits. A credit certifies but the fulfilment of a requirement significant only in relation to both the level of the expected learning outcomes (relation to qualifications frameworks or systems) and the time within which these learning outcomes are to be expected (credit points). This favours ECVET and ECTS consequent orientation towards learning outcomes (thereby following EQF) and the interpretation of credit points as quantitative indicators in the sense of notional learning time (Dunkel and Le Mouillour, 2007).

The learning outcomes approach brings prominently the issue of labour market relevance of qualifications. Learning outcomes are defined broadly as 'statements of what a learner knows, understands and is able to do on completion of a learning process' (European Parliament and Council, 2008). In the context of ECVET testing, this leads to developing ECVET as a unit-based credit system on the basis of occupational standards in cooperation with labour market stakeholders and professional associations (CEDEFOP, 2010c).

As mechanisms, credit systems set rules for accumulation and recognition of learning outcomes or credits. They lead to questioning the nature of qualifications, the value of learning outcomes for qualifications awarding or any other forms of recognition, the linkages between qualifications (across qualifications levels) and the coherence of the level structure. Including/excluding qualifications (for accumulation), setting requirements for qualifications (size, design) or, defining relationships between qualifications (i. e. linkages as in Scotland) hint at the labour market-fit of qualifications and at the increased importance of validation and recognition within E&T. Validation mechanisms imply looking at occupational, educational, qualification or validation standards. Choosing solely educational standards for vocationally oriented qualifications at higher qualifications level, would lead to get trapped into the everlasting debate on vocational vs. academic drift. Occupational or validation standards would open up towards the analysis of the learning outcomes (in relation to the labour market expectations).

Looking at the Futures of the European Tools

Besides qualifications frameworks and credit systems, and the learning outcomes approach, education and training systems as well as qualifications systems are evolving under commodification, globalisation or competitiveness pressures and processes. Education and training institutions (at all levels) are undergoing changes in

terms of financing rules, responsibility delegations, attainment groups and roles in national or regional socio-economic networks.

Qualifications frameworks and credit systems are prompting a new relationship between HE and VET. Those are emerging from the structure of the tools (level definition, transfer and accumulation, access, learning outcomes approach), from reviewed governance mechanisms (agreements, coalition building, soft law) and their objectives (transparency of qualifications, mobility, lifelong learning). Education and training is much path-dependent. Discrepancy between policy and practice or European and national policy level are perceptible, not the least influenced by the characteristics of the Bologna and Copenhagen processes and the subsidiarity principle in VET. At the same time the interdependencies between national and European levels render difficult to draw lines of endogenous development.

Credit systems and qualifications frameworks can relate differently to each other. These approaches can be clustered in three main categories:

1. *No formal integration* of credit systems and qualifications frameworks. Lack of integration means that the two tools are governed independently and that one is not the requirement of the other one (i.e. qualifications have to use neither a measure of volume, nor a unit based structure). This is the case for the time being in France, Finland or Slovenia;
2. *Integration based upon the passive role* of credit systems and qualifications frameworks. This integration has for main purpose to create a common approach to 'signalling' qualifications in terms of set of levels and indication of the volume of learning. This is the case for the Scottish Credit and Qualifications Framework, or the EHEA Framework in Europe;
3. *Integration based upon the active role* of credit systems and qualifications frameworks. Both tools are integrated to create a single approach to design and award of qualifications. This is the case for the UK-EWNI Qualifications and Credit Framework (CEDEFOP, 2010b).

The level of integration of frameworks and credit system does not necessarily impact on the degree of openness of the qualifications system in terms of progression pathways for learners. Qualifications frameworks map out and organise qualifications systems according to a set of agreed criteria. However it is not clear yet whether the integration of a unit-based structure into a single framework provides significant added value to the learners and wider stakeholders. Potentials for change ought to be considered from a users' perspective. Functioning credit systems and qualifications frameworks, whatever their nature, seek to increase readability of qualifications and to facilitate access to learning and qualifications, they need to be complemented

by targeted information and guidance practices. In countries used to operate with frameworks and credit systems, learners would express their qualifications in levels and credits. This is also a dimension of change, a cultural shift which might entangle our education and training traditions.

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Patterns of Recruitment and Induction in Selected European Countries: First Results of a Feasibility Study

Phillipp Grollmann and Marthe Geiben

Introduction

In this contribution we present two projects¹ that are carried out by the section European VET policies/International Benchmarking and monitoring of BIBB. The projects deal with an international comparison on the question of how companies recruit, with a focus on labour market entrants and what they (need to) do in order to make sure, that labour market entrants fulfil the expectations that employers have in terms of skills and competences on the level of intermediate skilled work. One project was a feasibility study and the other project, that is just starting, is a full study following the feasibility study.

The aim of the two projects was to investigate the linkage between establishments' recruitment practices (the qualifications and competences on which companies base their search), induction and work organisation in various European countries and the quality assigned to such VET system by employers.

The underpinning assumption is that the organisation of the respective educational systems (vocational/non-vocational, dual/school based) exerts a significant influence on the quality of the VET system.

¹ Patterns of recruitment and induction in selected European countries, INDUCT II.

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Why Is this of Interest to VET Research?

The Political Context

There are three political developments that are related to the research presented here: the discussion surrounding the international assessment of VET, the European co-operation process EQUAVET and the shifts on the German labour market that might be emerging due to the Bologna Process and the introduction of a short-term higher education degree.

During the years 2008 and 2009 there has been an intensive discussion in Germany about the possibilities of an international comparative large scale measurement of competences in VET in accordance to the OECD PISA Studies. This discussion was initiated through a feasibility study that was carried out on behalf of the German Ministry of Economics and Technology (Achtenhagen et al., 2006) and initial preparatory work undertaken by the Federal Ministry of Education for such a Large Scale Study in VET (VET-LSA) in co-operation with a number of European Union Member States. This transnational project was in fact not implemented for a number of reasons. A major problem to potential participant states was the excessive costs of such an activity in a period of economic crisis. However, during this preparatory phase further studies were carried out and the findings documented (Achtenhagen and Winther, 2009; Baethge and Arends, 2009; Nickolaus et al., 2009). The main discussion that emerged from this initial study raised the question about whether psychometric testing as such, or the specific tests under development, formed a valid measure of the outcome of Vocational Education and Training in Germany or in international comparison. One of the major underpinning factors associated with VET, the notion of *Vollständige Berufliche Handlungskompetenz* (holistic professional competence) was not adequately represented in the proposed methodological inventory (Hauptausschuss des Bundesinstituts für Berufsbildung, 2008, 2009) Currently a programme ('Ascot') is underway in which – for the time being – instruments of vocational competence assessment are further developed for the potential use within international standard setting.

During these discussions there was also a call in the Board of BIBB for alternative and complementary instruments for the comparative analysis of VET systems. On the basis of this demand the described research was developed and put in place. A complimentary concept to the direct measurement of the output of VET is to look at the quality of VET through an employers' perspective.

At the same time as the discussions emerged about the assessment of competencies, it was recognised that the process of enhanced European co-operation in Vocational Education and Training was being supported by the so-called Brüge-

Communiqué. Within this initiative there are a number of projects aim to increase the transparency between European VET systems. One of the building blocks in this process is EQAVET (European Commission, 2009). The aim of this sub-project is to develop and maintain measures of quality assurance in and between member states. In the annex to the respective resolution of the European Council, indicators can be found for the assessment of quality in VET. One of the listed indicators (No. 6) is the Utilisation of acquired skills at the workplace, including the satisfaction rates of individuals and employers with acquired skills/competences. Our research has contributed to mechanisms for measuring this indicator.

In Germany there is, in addition, an increasing interest in the relative strengths and weaknesses of academic and vocational degrees linked to the Bologna Process. In particular the exploration of new forms of qualifications that may be in competition with the different levels of vocational degrees (see also Weigel and Hippach-Schneider in this Volume).

Recruitment, Induction and the Quality of VET in the Scientific Discussion

There are a limited number of published studies that evaluate the effectiveness and quality of (vocational) education systems in international comparative terms.

Matching of Supply and Demand

Looking at the matching of the skills supply to meet demand from companies is one dimension of the performance of VET systems. This is an area that survey data can be collected from companies. However, despite this, employers will not formulate their skill demands independently of surrounding labour market and educational structures.

A further expectation is that a large part of occupationally useful knowledge and skill is acquired during the work process itself. In this connection, more than two thirds of those surveyed within the scope of an investigation undertaken on behalf of the European Commission (Brown, 2010) stated that they had obtained a major part of the knowledge required for their own occupation by confronting challenging tasks during work.

This helps us to understand the more complex nature of 'matching' between employers' skills demands and available skills supply. There is a need here to encompass the process of recruitment, company use of skills and competences and the further development of such competencies in operational practice. Alongside other fac-

tors, such as ascertaining the competences of those completing training courses or the length of their transition to working life, these may be included under *one* (composite) indicator of the outcome quality of educational and learning processes. Such a perspective also acknowledges the debates on the definition of competence that are ongoing within VET. These broader definitions may also include:

- work organisation within a domain,
- task structure with specific skills requirements and
- occupational competence development.

The international comparative research literature would suggest that the company environment factor in learning has been insufficiently acknowledged: recruitment processes, company use of human resources and company learning, induction and continuing training processes. This factor needs to be taken more into account if future in order to conduct international comparative studies using competence measurements in vocational education and training. It is also highly probable that the structure of the educational system is a significant determinant of quality, in much the same way as is the content and organisation of the respective occupational activities.

Underlying Assumptions

There is a number of underlying assumptions that inform our research:

1. Processes of recruitment and induction are specific to occupations, they cannot be fully understood out with the occupational context
2. In order to arrive at an operational definition of the 'medium' qualifications level for international comparisons, we will need to distinguish analytically between various characteristics of our definition. In particular, the following aspects:
 - a. work tasks and work organisation,
 - b. wages and salaries and
 - c. educational qualifications and competences.

A systematic investigation of these various characteristics will permit the development of a sustainable concept of work at the medium qualifications level for the purpose of the comparative survey. An essential theoretical premise is that in many domains of work a considerable part of occupational skills and relevant knowledge

can only be learned in a self-directed manner via the completion of work tasks. This assumption characterises various approaches in vocational education research, theory of knowledge and occupational sociology in equal measure (Böhle, 2004, 2008; Fischer, 2000; Neuweg, 2004, 2005). If such a premise were to be correct, vocational education systems in which experience of work constitutes part of the training course ought to be superior to VET systems where this is not the case. Adopting such a perspective would mean that company experience would need to be 'compensated for' within our calculations.

Occupational sociology approaches extending as far back as the 1970's have, however, shown that company skills requirements do not exist in isolation and that there is a reciprocal dependency between such skills requirements and the pre-structured skills supply delivered by the respective educational or training system (see Drexel, 1995; Lutz, 1976). It is precisely the interlinking of these two perspectives, of industrial and occupational sociology and the theoretical skills perspective, which forms the basis of our research.

This prospective interlinking provides possible linkages to two current socio-scientific theses. In the wake of the change to a knowledge society, a relative increase in systematic knowledge would occur as one of the central characteristics of post-industrial societies. One argument here states that this would mean that institutions of higher education would become the 'crucial source for the development of cultural orientations, economically useful knowledge and highly skilled workers' (Baethge et al., 2006). Other authors, on the other hand, make reference to the continuing significance in the future of the function of a corporately embedded form of company-based Vocational Education and Training in terms of securing the effectiveness of employees and the competitiveness of trade and industry (Bosch and Charest, 2010; Hall and Soskice, 2001)

Status of Survey and Comparative Empirical Research

Comparative educational research places its main focus on learning in formal educational structures. Within the scope of PISA, a widely accepted set of instruments was developed which allows the output quality of secondary school education to be measured and the effectiveness of systems to be evaluated. No such set of instruments have been developed for company skills requirements that would enable us to measure education and VET outcomes.

Various methods for determining skills requirements and needs with regard to specific demands already exist within the field of skill requirements research. These

include surveying the subjective evaluations of employees or experts and the objective assessment of formal qualifications and certifications held by employees in terms of certain occupational activities (Tählin, 2006a). More recently there has been further development in the field of using employees' own subjective evaluations of their own activities as a method of recording data (Green, 2006). Notwithstanding this, experiences with these various types of measurement show that they are best suited to identifying general bundles of tasks which could fundamentally occur at any workplace. In contrast to the data presented here, they are not occupationally specific. The German Employee Survey conducted by the BIBB and the Federal Institute for Occupational Safety and Health (BAuA) records data at the level of occupational groups (Tiemann et al., 2008).

A further quantitative factor used in various (international) individual surveys (including the European Social Survey) is the question of the necessary induction time given different educational outcomes (Tählin, 2006b). An initial preliminary analysis, for example, indicates that the necessary induction periods estimated by employees are longer in countries with a strongly school-based educational structure than they are in countries which have dual structures. The UK Skills Survey shows that company induction measures have become more important and increased in duration time over the past 20 years (Green, 2006).

The literature on the transition from school to the world of work also provides a different perspective of the interface of the educational system and the vocational education and training system. Relevant studies from the 1990's based on data from the European Labour Force Survey and available longitudinal studies have given rise to a typology which differentiates countries with regard to the length of time taken to make this transition for different age cohorts (labour market entrants) (Müller and Gangl, 2003). Although these types may be useful as context variables in the selection of countries for this investigation, they do not provide any information on company practice regarding human resources deployment of career entrants and company induction. More recent papers dealing with this problem (Brzinsky-Fay, 2007) place the emphasis on the analysis of transitional stages (meaning the order of phases of employment, unemployment, education and VET within the whole transition) and do not offer any deeper insight into the initial phases of employment.

A central theory for the explanation of differences in transitions used in many international studies is the differentiation between internal and occupational labour markets (Maurice et al., 1982; Eyraud et al., 1990; Marsden, 1990). The former are characterised by company specific skills acquired within internal training processes whereas the latter comprise skills independent of the company which are usually obtained via an apprenticeship. When examples of this are given, France and Italy

are mostly seen as internal labour markets, while Germany and the United Kingdom – until the 1980's – are recognised as occupational labour markets. The end of traditional 'apprenticeships' triggered a decline in occupational labour markets in the United Kingdom. These were replaced by 'entry tournaments', characterised by easy entry with a low level of pay and a lengthier time to secure status and a position of stability within the occupation (Marsden, 1990). As far as Germany is concerned, strong occupational labour markets continue to exist for entry to employment. Notwithstanding this, there is evidence to suggest that major companies are beginning to spend more time on developing company specific competences. In general terms, however, the emphasis is on institutional regulations or the general conditions governing entry, especially wages, security of employment, status etc.

One particular resource available for internationally comparative research on company-based continuing training is the dataset of the 'Continuing Vocational Training Survey' (CVTS), which is conducted every six years. The CVTS does not, however, provide any responses to the questions posed within the scope of the present project. It would have been valuable to conduct a comparative evaluation of the data with regard to company-based continuing training activities for different age groups (in particular 'career entrants'). The European Labour Force Survey does not provide company data on the length, purpose and content of continuing vocational training activities. Existing data sources, thus, provided little information on the variables under consideration for the present study.

From an international comparative perspective, a link in this regard can be made to a number of industrial sociology and labour market studies carried out at the end of the 1990's which adopted a decidedly company-based perspective in dealing with the issue of skills supply and company human resources deployment patterns (Backes-Gellner, 1996; Steedman et al., 2003).

Research has hitherto provided insufficient knowledge regarding specific patterns or types of company induction and continuing training processes. This means that the proportion of company-based learning involved in the development of occupational competence and employability skills remains largely unknown and for this reason is treated as a black box in current labour market and skills research work (see Schnitzler et al., 2009). The organisation and processes of company recruitment and induction are, however, clearly important in the development of employability skills (Ashton and Sung, 2002; Butler et al., 2004). In order to be able to evaluate these processes appropriately, we require better empirical data on activities, tasks and work organisation at the medium qualifications level, on the value and significance of educational qualifications in company recruitment decisions, on further

criteria used in recruitment decisions and on the related organisation of company-based continuing training, of learning in the workplace and of the mechanisms of company human resources development.

Selection of Countries

Based on the quality of existing research we have selected a number of countries to be included in our feasibility study. More or less, we can claim that the selected countries represent different combinations of forms of integrating vocational content into the educational system and types of labour markets. Germany constitutes an example with a strong vocational track in secondary education, just as Finland, where however, work experience is not as strongly integrated as in Germany. Spain constitutes a vocational education system that has only recently strengthened the vocational part of secondary curriculum as well as work experience and could be referred to as classical case of internal labour market and a strongly academic oriented education and training system. UK has largely abandoned its apprenticeship programmes and can be seen as an example of an academic oriented education system with mainly internal labour markets. The UK is, in addition, a case were – in economic terms – ‘poaching’ is quite a common phenomenon, where employers hire individuals with experience and skills that have been acquired with other employers and pay a premium on this instead of employing and supporting labour market entrants. All this has specific consequences in terms of induction practices that have not been subject to systematic empirical research, yet.

Research and Research Results

The research methodology for this feasibility study consisted of a literature review; case studies and a pre-test for a large scale study. In particular:

- background literature reports on the field of study;
- explorative case studies on the development of the investigation methods and design instruments for the research,
- pre-testing of one general and two occupationally specific survey sources (motor vehicles service and commercial activities in manufacturing industry).

Figure 1 traces the analytical framework for the empirical exploration of the subject area of recruitment, induction and continuing training. 'Induction' is understood to be the process which harmonises graduate characteristics with the requirements resulting from work organisation in intermediate level work. Applying our understanding of intermediate level work we can see good quality research exists on the questions 2 a and b of the underlying assumptions, i. e. wages and salaries as well as work organisation and work tasks, but that there is a definite research gap when it comes to educational credentials and their use and meaning in recruitment decisions as well as their correlation with the expectations of employers and the competences that individuals apply in work settings. Different associated fields of study have been considered but it was found that such approaches (see Hefler, 2010) place the main emphasis on institutions in terms of the way in which they act as mediating variables for company action strategies, whereas labour market research devotes particular attention to wage determination processes. Within this context, however, skills and competences are considered as a marginal factor for company decisions on staff recruitment or investment in technology (Spitz, 2005).

In this study, however, the main focus is – in contrast to the prevailing economic literature – on the interlinked conditions governing skills, recruitment and the organisation of company-based learning. The focus of attention is on the question of what companies actually do in order to support newly recruited career entrants in developing the competences expected of them at the medium qualifications level. There has been little research reported to date on this aspect of competency development.

Case Studies Exploring the Field

In the case studies that were carried out in order to test our research questions in the field and check the robustness of our instrument, 'extreme' types of company from the occupational fields of motor vehicle service and commercial managerial tasks were investigated in order to capture the various forms of implementation, patterns and types of the induction practice designed. Typical patterns would include 'traineeship arrangements' in the form identified in some cases for the commercial area or long-lasting 'en passant' learning during the initial occupational years. The results of these case studies informed the development of an instrument for recording the aspects of intermediate level work, recruitment, induction, work-based learning (WBL)/training (TR) and human resources development (HRD) – the level designated as 'practices' in the above Figure. The assumption is made that

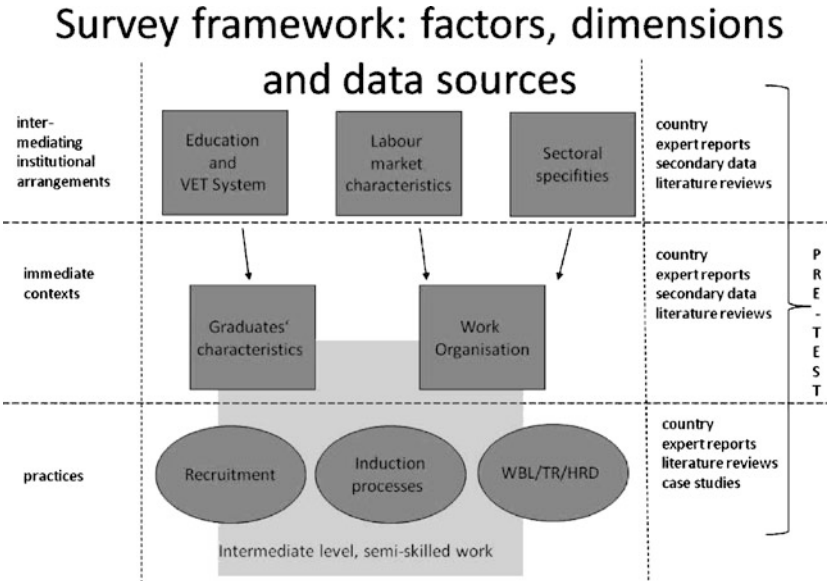


Figure 1 Analytical framework for the empirical exploration of the subject area of recruitment, induction and continuing training. WBL = Work-based learning, TR = Training (Source: own illustration)

a difference exists between the competences of the career entrants and what is expected in the job profiles at the intermediate qualifications level, the first aim of company-based learning being to overcome this difference. To this end, case studies have been conducted within the scope of the feasibility study, the results of which were used to inform a standardised survey in the two occupational fields forming the focus of our investigation. The variables at the two other levels of 'immediate contexts' and 'institutional arrangements', in respect of which reports have been produced as part of the feasibility study to accompany the company case studies, flow into the survey instrument as independent variables. This means that the feasibility study also includes the piloting of items which serve to provide a degree of information on the vertical and horizontal division of labour within the respective company.

In the area of 'work organisation' interview partners were, for example, confronted with a broadly based occupational profile and are asked how many different job profiles exist within the company in order to cover such a wide profile. This en-

ables something to be learned about the degree of specialisation/‘Taylorisation’ of the activities in the relevant company. Notwithstanding this, the preliminary study also integrated items relating to the recording of wage development, competence development and work organisation. This allows the data collected to serve as a basis for investigating the extent to which a valid ‘intermediate level work’ construct can be assumed across the various labour markets.

Results of the First Phase of the Project

In the other countries participating alongside Germany (Finland, England, Spain), the issue of company specific competencies (especially with regard to the focus on career entrants) forms part of the VET research agenda. All of the countries display a tendency to integrate in-company occupational experience more closely into formal vocational education and training than was previously the case. On the other hand, there is an interest in tracing a more precise picture of learning in the workplace and how it is organised. In addition, attention is drawn to a mismatch (‘over-education’) between workplace requirements and the existing skills and qualifications of those who have completed training in the selected occupational fields (particularly in England) and to ‘skills deficits’. This data have been extensively documented for England and Spain. In Spain, the political consensus obviously exists that occupational contents need to be accorded greater weight in Vocational Education and Training. All countries (especially Finland and Spain) are currently recording a more rapid change with regard to the dimensions of the investigation than is the case in Germany.

Car Service

The following table provides a summary of results which have emerged within the scope of the background reporting and the case studies and which are currently being evaluated with a view to drawing up of a prototypical survey instrument (dimensions: activities/work organisation at medium level; value and significance of educational qualifications and further criteria in company recruitment decisions and company-based continuing training/learning in the work process/company human resources development).

Considerable differences in the recruitment pathways in the various countries have been identified (see Fig. 1). Whereas a type of basic vocational training for

Table 1 Summary of the results from background reporting and the case studies (Source: own illustration)

Recruitment in car-service					
	Educational Qualification	VET qualifications	Occupations	Recruitment	TR/WBL/HRD
UK	GCSE (ISCED 3)	4 apprenticeship and advanced apprenticeships		references experience ("poaching") attitudes (trainees)	2–3 years on-the-job-learning for labour market entrants
FIN	ISCED 2	2 college programmes		practice based VET (new) Employment agency	On-the-job-learnig
E	ISCED 2	Medium level VET Higher level VET	7 occupations	Practice based VET (new)	"Internship contracts" on-the-job-learning 2–3 years
D	ISCED 2+	2 (3) apprenticeship programmes		Apprenticeships	two trainings per year

motor vehicle service is apparent in Spain and Finland, apprenticeship training programmes exist in England and Germany. Completion of such training is normally a condition of recruitment in Germany, whereas in England formal training is not as important from a company point of view as documented occupational experience. Major differences which ultimately are only capable of interpretation via an analysis of company data are revealed both in the structure of activities and activity profiles of the companies and in the documentation produced by relevant bodies such as branch associations. In Spain and Finland, there are signs of a tendency for companies increasingly to recruit career entrants who have completed a work experience placement at the company in question during their time at school. Company initial training periods are stated to be between two and three years in all three national contexts. More detailed information on the form and process of such training is currently being collected and evaluated.

Business Administration

Two essential preliminary results emerge in the field of industrial clerks. A majority of functions covered in Germany by industrial clerks are carried out by employees with a higher education qualification in the comparison countries, where recruitment of employees with a vocational qualification are an exception. Different activity profiles exist within the company work processes for typical commercial managerial tasks and functions. These profiles are transferred to persons with specific qualifications (e.g. procurement). Some are also completely transferred to other companies (e.g. human resources management).

After this initial phase based upon case studies, literature reviews and country reports we have formulated a number of hypotheses that we would like to pursue further in the full study that it is just starting. However our standardised pre-test data set (Grollmann et al., 2010) allows for preliminary answers on some of the questions raised. Here, we will present our working hypotheses first and will then check in how far our pre-test data set can already provide answers.

Research Hypotheses

On the basis of the initial research undertaken we have formulated the following tentative hypotheses:

- Hypothesis I: *the required induction time is materially dependent on the requirements of the respective occupational field.* Particularly in fields of occupational activity where the required abilities for dealing with work requirements are characterised by a combination of theoretical and practical experience-based knowledge, the necessary induction periods for career entrants are equally long. From a company perspective, these induction periods are reflected in the recruitment process not only in terms of estimated induction time but also as a preference for certain qualifications (vocational/academic) and/or required experience of work. For this reason, they have remained hidden in comparative investigations to date.
- Hypothesis II: in fields of occupational activity where the required abilities for dealing with work requirements are mainly characterised by specialist and theoretical knowledge, the possibility exists of using appropriate work organisation for the direct productive deployment of graduates without work experience.

- Hypothesis III: from the point of view of the companies, the quality ascribed to the Vocational Education and Training system depends considerably on the required induction time of career entrants. This correlation particularly applies to occupational activity fields where the required abilities for dealing with work requirements are mainly characterised by a combination of theoretical and practical experience-based knowledge.

Findings on Induction Times

In principle our dataset largely supports our assumptions, arguments and hypotheses. There is a strong correlation between the quality ascribed to the vocational education system by employers and the length of induction times. Either two variables have been used as items in our research. The correlation is very strong when disaggregating employers' perspective into different dimensions of quality. Interestingly, when quality is broken down into several categories it is not only the 'practical competences of VET graduates' that correspond negatively to the length of induction time, but also the 'general communication skills'. Obviously, work experience is not only contributing to the very special practical occupational skills but also to a certain 'habitus' that is seen as a necessity for successful work in the sectors (Figs. 2 and 3).

It is also in accordance with our general assumptions that induction times are higher in Car Service than in Business Administration. This can be explained by two

Satisfaction with students' job related	Induction time												total					
	basic requirement		up to 1 month		up to 6 months		up to 12 months		more than 1 year		more than 2 years		N	%				
	N	%	N	%	N	%	N	%	N	%	N	%						
practical competence and skills	Very dissatisfied				1	3,7	1	1,8	1	1,7	16	14,3	19	7,5				
	Dissatisfied	1	100,0		2	7,4	12	21,8	19	32,8	33	29,5	67	26,3				
	Neither				8	29,6	12	21,8	16	27,6	33	29,5	69	27,1				
	Satisfied			2	100,0	15	55,6	28	50,9	21	36,2	29	25,9	95	37,3			
	Very satisfied					1	3,7	2	3,6	1	1,7	1	,9	5	2,0			
Total					1	100,0	2	100,0	27	100,0	55	100,0	58	100,0	112	100,0	255	100,0
Student's communication competences	Very dissatisfied							1	2,0			2	1,9	3	1,2			
	Dissatisfied	1	100,0			3	9,7	6	11,8	14	25,0	18	17,5	42	17,2			
	Neither					8	25,8	12	23,5	8	14,3	32	31,1	60	24,6			
	Satisfied			2	100,0	19	61,3	28	54,9	32	57,1	47	45,6	128	52,5			
	Very satisfied					1	3,2	4	7,8	2	3,6	4	3,9	11	4,5			
Total					1	100,0	2	100,0	31	100,0	51	100,0	56	100,0	103	100,0	244	100,0

Figure 2 Quality of VET and induction time (Source: own illustration)

How long until new staff without experience perform as well as a fully competent employee?

	Occupational Field				Total	
	CS		BA		N	%
	N	%	N	%		
Up to 6 months	8	5,8	35	21,2	43	14,1
Up to 1 year	19	13,7	49	29,7	68	22,4
More than one year	23	16,5	44	26,7	67	22,0
More than 2 years	89	64,0	37	22,4	126	41,4
Total	139	100,0	165	100,0	304	100,0

	Occupational Fields in Countries												Total					
	CS Germany		CS England		CS Finland		CS Spain		BA Germany		BA England		BA Finland		BA Spain		N	%
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%		
Up to 6 months	3	60,0	4	8,2			1	2,4	22	50,0	12	25,5	1	3,3			43	14,1
Up to 1 year	2	40,0	8	16,3	3	6,8	6	14,6	20	45,5	14	29,8	5	16,7	10	22,7	68	22,4
More than 1 year			11	22,4	9	20,5	3	7,3			9	19,1	16	53,3	19	43,2	67	22,0
More than 2 years			26	53,1	32	72,7	31	75,6	2	4,5	12	25,5	8	26,7	15	34,1	126	41,4
Total	5	100,0	49	100,0	44	100,0	41	100,0	44	100,0	47	100,0	30	100,0	44	100,0	304	100,0

Figure 3 Induction times (Source: own illustration)

reasons: one reason could be that the share of practical experience-based knowledge in occupational competence is higher in this field than in Business Administration. Another reason could be that there is more flexibility in the task structures to adapt work organisation to the vocational competences of labour market entrants.

The comparison between Spain and Germany illustrates the longer induction times resulting from a fulltime school based VET system.

Work Organisation as an Important Intermediary Variable

A crucial intermediating variable is work organisation (see Fig. 4). E.g. we find rather low induction times in the UK context, we assume that this is based on two reasons: in the UK we find much less recruitment of labour market entrants in both sectors than in the other countries. In addition we find to effects that cumulate for the UK:

- The division of labour is higher in bigger size establishments than in smaller size establishments across countries;
- Division of labour is highest in UK across all establishment sizes;
- This is especially the case the bigger the establishment is.

	Size	Micro	Small	Medium	Large	All
	CS	(1-9)	(10-29)	(30-49)	>=50	
	BA		(10-49)	(50-249)	>=250	
	DE	2,64	3,61	7,14	9,67	5,13
Division of labour is higher in bigger size establishments than in smaller size establishments across countries	UK	2,79	5,63	10,79	28,67	11,06
Division of labour is highest in UK across all establishment sizes	FIN	2,13	3,82	6,00	3,67	4,32
This is especially the case the bigger the establishment is	ES	2,10	2,82	3,12	3,56	2,88
This might be the reason for lower induction times	All	2,48	3,76	6,22	12,58	5,63

Figure 4 Work organization across countries and establishment size (Source: own illustration)

Outlook and Perspectives

The data provided by the feasibility study will make it possible to identify patterns and types of induction. It is, for example, conceivable that similar patterns of induction are identifiable across the borders of different countries, i. e. above and beyond educational and VET systems. These may, for example, take on the specific form of an ‘apprenticeship’ in one case or a ‘traineeship’ in another or may simply correspond to ‘en passant’ learning.

When adding the average induction times and the school-based internships for Spain and compare this to the time of German apprentices in the company plus the average induction time after completion of VET we land in both cases at around 2–2,5 years. Our investigations also show that there is considerable uniformity in terms of work organisation in small car-service establishments across all countries. However, in business administration the situation is considerably more complex. There is a greater variety of ‘packages’ for different qualified employees, different induction and business processes and, consequently, different job profiles.

In terms of important structural characteristics, however, there are considerable similarities, as shown in the results of the feasibility study. A key assumption of the present research project is that occupational learning is always connected with a duality of learning venues. The ability to fulfil company work tasks would, therefore, in every case require a combination of school-based learning and experience-based in-company learning. The quality of Vocational Education systems (the respective combination of school-based and experience-based learning) determines a company's training activities with regard to compensating for the difference between the occupational ability of new career entrants and employees seen as 'fully competent'. These alternative courses of action would then be: a) longer induction phases via appropriate company organisational patterns and/or continuing training arrangements to promote learning or b) adaptation of work organisation and of jobs to the training status of the newly recruited staff.

Both these variants should be understood as options which will in reality present themselves as mixed forms of learning activities within the company. Companies will choose accordingly between the variants of training and/or work organisation in their recruitment policy. The selection of the relevant specific mix will essentially depend on the respective characteristics of vocational training, labour market institutions and other exogenously determined structures (e.g. technologies, procedures, product, and markets). The project assumes that the correlative effects between the organisation of the educational system and the organisation of the correlation between recruitment and induction are essentially determined by the contents of the relevant skilled work. Within this context, the significance of knowledge acquired in experience-based learning processes is crucial for occupational activity and competence.

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Vocational Education, Poverty and Power

Ute Clement

Introduction

Vocational Education and Training can improve living standards by raising productivity and earnings, and through its so-called ‘neighbourhood effects’. This chapter discusses the potential effects of competency upon the wellbeing of persons and nations, as well as the restrictions that social power exercises on the use of competence in the labour market.

Although competence is necessary, it is not sufficient for individuals searching for a job in the labour market. They also need certificates to compete for jobs. This is where power comes into play, as certificates are issued by institutions which are concerned about their own interests as much as they are about the quality of Vocational Education and Training (VET).

In the English language it is common to speak about ‘education’ rather than ‘competence development’. The term ‘education’ includes both formal and informal education, as well as general education and VET. In this article, I will focus on ‘competence’ and the capacities and dispositions which enable persons to act efficiently and safely in work and everyday life. This definition includes all forms of knowledge and skills that make it possible to work and act faster, safer and in a more productive way. It should be noted that compound-competences such as social, media or personal competences, are only part of this definition if they contribute directly to actions. For example: empathy is a very useful part of the competence to interact with patients or clients. Empathy as such is a personal trait, but would not be considered a competence in this definition.

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Competences are acquired through trial and error, simulation, imitation, understanding, training or experience. Formalized education is frequent, but by no means the only way to develop skills and knowledge. Informal learning in a master and apprentice relationship, between parents and children, colleagues or through self-study material is probably more relevant for competence building than formal learning in schools and universities.

Bourdieu pointed to the fact that formal and informal ways of learning are embedded in social structures of inequality. He distinguishes three forms of cultural capital. There is 'material' capital such as books and paintings, and symbolic capital such as titles. And there is 'embodied' cultural capital, meaning the knowledge, skills and capacities which we acquire in our interaction with our environment. The accumulation of such 'embodied' cultural capital is only possible if we invest our time in learning processes. This time is not tradable; we have to afford it ourselves (Bourdieu, 2005, p. 55).

The fact that we need personal time and effort to acquire competence often leads us to suppose that such acquired competences can help us overcome social limitations. VET experts are especially prone to assume that competence and training alone are able to improve lives. Even without access to materialized cultural capital or access to expensive schools, it has been argued that individuals can invest their time and effort in the acquisition of competences in life and work. If we are smart and skilled enough *and* others recognize our knowledge and skills, social limits can be overcome. Although this may be true for some people, it is not an (appropriate) effective way of changing unequal societies, as we will see later in this article.

Can Competence Reduce Poverty?

Competence and Good Life

In order to speak about the benefits of VET in reducing of poverty and obtaining decent work, we first have to define these terms. Many statistics, for the sake of simplicity, understand poverty as the lack of economic resources (e.g. less than 2 dollars a day per person or less than the half of mean income in a country). Not only is poverty more than the lack of income, it is different from it. There are multi-dimensional concepts of poverty which include the absence of social influence and power, social exclusion, cultural poverty, the loss of identity or threats to dignity. Vulnerability (understood as temporary risks of poverty) and inequality are further parts of this definition, although King and Palmer insist on the fact that they are related to poverty but not identical to it (King, 2006, pp. 13 et seq.).

Decent work, on the other hand, is defined by the ILO as labour conditions in which fundamental principles and rights at work are realized. Decent work should provide employment and income opportunities as well as social protection and social security. At least social dialogue and political participation should be assured. If we follow the definition of the ILO, decent work in its classic sense will be work in formal labour markets. Therefore it is linked to certificates and other formal access methods.

When the early authors of Human Capital Theory, such as Theodore Schultz or Gary Becker, described education, skills and motivation of workers as investment in productivity and prosperity (Edding, 1964, pp. 167 et seq.), there was sometimes an unspoken reference to modernization theory in their work. Formal education would help to optimize the 'quality' of the population, abolishing superstition and inefficient working manners in order to bring more civilization and modern behaviour. Deficient family planning, obsolete traditions and the lack of discipline seemed to hinder the implementation of modern industry. The development of social prosperity only seemed to be possible, if clusters of 'modern' behaviour were introduced. Human capital theorists of the first generation claimed that education should show people how to use their time efficiently, to postpone personal needs and orientate behaviour to rules and regulations. Only if people acquired this kind of 'modern' behaviour, would they be able to sustain industrialized working methods.

Not only liberation pedagogy activists such as Paulo Freire, but also neoliberals criticized those ideas later on. Whereas Freire pointed out the eurocentric assumptions/position of modernization theories, neo-liberal thinkers doubted that productivity could be enhanced by social behaviour. Education should not be overrated in an idealized way, but oriented to the real needs of the economy. Instead of 'education', the term 'qualification' now seemed more appropriate. The acquisition of qualifications could be seen as an investment in future individual benefits. But it also could be understood as investment in regions and nations.

Porter (1990), and after him many others, explained the importance of knowledge and skills as productivity factors. Not only individuals but entire enterprises and regions may profit from interactions within the complementary process of cooperation and competition. If enterprises, institutions and schools are able to build networks of knowledge production, unique constellations of competence may be the synergetic result. In 1992, the OECD proposed the term 'corporate competitiveness' to describe the fact that:

while competitiveness is situated in the activity of firms, corporate competitiveness is not exclusively of their own making. It is also an expression of domestic institutional and social environments; it has a structural component and is supported by a wide range of externalities (OECD, 1992, p. 254).

But whereas this connection was true in *ex post* explanations for growth, unfortunately it was not able to be used as an instrument to promote development and prosperity. In most countries the level of education has grown in the last 30 years, but industrialization has not taken the same homogeneous path (Menzel, 1992). In some cases higher levels of education have even had negative consequences, for instance when individuals with higher education have squeezed degree holders with lower certificates out of the market, or when states have absorbed degree holders into oversized public sectors. It seems to be a common understanding today that there is a positive correlation between national growth and investments in education, but only if the produced qualifications can be absorbed by the labour market (see Gill et al., 2000, p. 17).

Empirical Evidence

Competence development reduces poverty in different ways: there is a direct effect on better understanding of working processes which reduces failure rates and improves problem solving capacity. One can assume that competences have a positive effect on quality, work security and complexity of work. In a more indirect way, competence also enhances self esteem and situational understanding. It may lead to innovation and initiatives with positive effects on labour market chances. It also enhances social capital during training situations: one builds up social networks with other trainees, colleagues or clients which may persist over a working life time. And there are so-called neighbourhood effects such as lower crime rates, higher trust in others or political participation. One can improve social prosperity in a more holistic sense (King, 2006, p. 50; Saxton, 2000; Mincer, 1993; Gnahn, 2008).

Although it seems quite safe to assume that there is a strong correlation between competence and prosperity, this relationship is not easy to confirm. Frequently, empirical studies base their research design upon formal degrees and their consequences. These may show a strong correlation between formal certification and success, but they do not demonstrate that competence in its 'embodied' form (Bourdieu, 2005) is able to reduce poverty and enhance possibilities to achieve decent work.

A possibility to show such effects would be through long-term studies in which persons would be accompanied on their path of knowledge acquisition and its effects on their living situation. But as those effects are sometimes realized only after a long time, investigators would have to be rather patient to get valid results. Another problem such studies would have to deal with is the difficulty of measuring the influence of factors other than those controlled upon the learning process – a difficulty which may easily disturb scientific results.

Even for those who work in the informal sector, education is helpful in order to have access to better jobs and higher income rates in this sector. Average returns to investment in such education vary widely between countries and are normally lower than in the formal sector. But even in the informal sector, employment is hierarchically structured, and job quality is linked to the quality of education of the jobholder. Persons without formal education are often pushed aside in a marginalization process into insecure, simple work (Lenhart, 1993, p. 88). As formal education levels are rather low in the informal sector, it is safe to assume that at this level it is rather the 'embodied' form of education which helps to enhance productivity and well being.

Although it seems self-evident that knowledge and skill help people to become more efficient and productive, it is not easy to scientifically prove this. Yet, we can show that people find their work to be especially satisfying when it contains possibilities for learning. People experience their work to be positive and satisfying when there is a high level of development and learning chances. Competence is not only the precondition for decent work; it is one of its structural components.

Consequences for Combating Poverty

When we are convinced that competence may help reduce poverty even without formal education and official degrees, supporting the informal sector and its training opportunities seems to be the logical choice. This is especially true because we know that informal and formal work sectors are often linked and exist in inter-dependency with each other. Jütting and de Laiglesia (2009, pp. 11 et seqq.) claim that the informal sector offers growing economies the necessary flexibility for growth. They estimate that on a worldwide level nearly half of all working relationships (without agronomy) are informal. Taking agronomy into account, this figure grows to 90%. It seems quite rational to assume that informal employment is an important fact and that it should be accounted for in economic policies.

Since the 1970's, there have been many attempts to improve training for the informal sector, often linked to self-employment strategies. Local training centres run by cooperatives or trade unions, sewing courses in child care centres or outreach initiatives in poor residential areas are examples of such a need-oriented approach. The paternalistic approach of integrating marginalized persons into the formal education system is replaced by a certain form of cultural naiveté with regard to the educational background of learners. Training in the informal sector quickly fails, when trainers try to introduce expensive, modern techniques and knowledge into a world so different from their own. Instead, training means to offer options, to discuss opportunities and to offer adequate resources. The paternalistic concern for

adapting technology to reach everyone, might change into the challenge to offer vocational training for all.

But quality barriers to informal training are obvious. Such training is nearly theory-free. The learners may qualify themselves to survive in the informal sector, but the lack of theoretical knowledge hinders them from finding better alternatives in their lives. Although, particularly in large cities, there are many private training institutions offering their services to the informal sector, it is difficult to assess whether these 'backstreet courses' (King, 1989, p. 29) would be improved or destroyed by external interventions. Often courses are offered at late hours in the evening and cost relatively high amounts of fees. Sometimes these charges are financed by private credit (Lohmar-Kuhnle, 1991, p. 163), but even so they are appreciated by clients. Female participation in the informal sector is above average.

Actually, little empirical evidence exists about private training in the informal sector. From a policy point of view, such training brings a lot of benefits which make interventions and support reasonable: a high percentage of people train in the informal sector, it is widely appreciated, it functions without external financing and its personnel are themselves normally recruited from the informal sector as well, meaning they share the same cultural codes as their clients.

To design VET for the informal sector as long-term training is rather unrealistic. The funding opportunities are low. Within the logic of subsistence economy, it seems nearly impossible for many working in the informal sector to neglect their income-generating job for training over longer periods of time. As reasoned above: The acquisition of 'embodied' cultural capital costs time. However, the investment of time and resources for training activities is especially difficult for the poor.

Even relatively low training costs (e.g. travel fees or learning material) are often experienced as a considerable financial problem for the poor. Therefore training programs for the informal sector have to adapt flexibly to the time management needs of trainees. Short-term training programmes would appear to be more successful as they reduce unrealistic expectations of trainees of attaining good labour market positions in white collar-professions as a result.

On the other hand, short-term training can be seen as contradictory to high expectations with regard to content and depth, such as they were formulated above. If training for the informal sector is supposed to pass on broad knowledge about production process, product development and quality control, without leaving out management skills and social competences, short-term training seems to be a less realistic solution. One exit out of the dilemma could be a modular system of training delivery in order to allow learners to systematically build up competences.

Although training in the informal sector is undoubtedly very merit worthy, it is not normally very successful when it comes to labour market transition. In many countries, the possession of formal (preferably academic) certificates seems to remain the one best way to enter formal labour markets.

Training Certificates and Success in Formal Labour Market

Because the labour market is anonymous and highly complex, it is necessary to trust in educational certificates (Gessler, 2006, pp. 86 et seq.). We are less reluctant to trust in the potential knowledge and skills of unknown individuals, if they can provide formalized certificates. These make it possible to acquire information about a person without exaggerated control costs or large on-the-job training periods. Thus, such certificates work like any currency and allow us to trade our competencies for benefits within the labour market.

Interestingly, this strategy proves to be successful even when certification and competencies are not closely related. Up to a certain level it is practical to trust a false currency. Yet in the 1970's, authors claimed that certificates serve more as a filter for selecting higher class individuals than as documentation of existing competence (Woodhall, 1994, p. 23). Thus even if persons with the certificate *X* do not have the related competence *x*, but are able to acquire it during the working process, it may be rational to trust in these certificates. This is especially the case, if transactional costs (e.g. for assessment centers) are higher than training costs on the job.

Of course, we trust in certificates such as drivers licenses or doctor titles, because experience tells us that holders of such have obtained the competency we believe them to have. They really are able to drive the car, write a book or repair the washing machine. But we also trust certificates because we trust the institution which issues them.¹ From a bureaucratic point of view, the concept of certification could be seen as a strategy for allowing access to labour market positions, relatively independent of family background and personal relationships. Formalized certification systems are able to overcome traditional allocation structures and replace them with objective criteria, potentially open to everybody.

¹ There are institutions which inspire less trust, and sometimes other institutions may confirm trustworthiness by placing seals of quality or other recognised signals.

How Can We Prove the Correlation between Certificates and Access to Decent Work Empirically?

In summary, we saw that there is a systematic gap between competencies which contribute to productivity and well-being on the one hand, and certificates which enable us to enter the labour market, on the other. The unspoken hypothesis (certificate equals competence, competence equals productivity) may not be so self-evident. But this hypothesis builds the foundation not only of labour markets but also of empirical studies on a national and international level.

The OECD concluded in 2009 that individuals in OECD-countries benefit from higher secondary and post-secondary/non-tertiary education (ISCED 3 and 4) by 39,840 US\$ (men) and 28,223 US\$ (women) annually compared to lower secondary credentials (OECD, 2009, p. 165).

International studies show a mean private return on one additional year of schooling of 10% (Psacharopoulos and Patrinos, 2002, p. 5). Psacharopoulos and Patrinos (2002, p. 5) studied 42 countries and came to the conclusion that rates of return are especially high in countries with low or medium income rates.

Empirical studies about social rates of return show a high probability for countries with a high education level in 1960 of reaching good development levels today (Galal, 2008, p. 43). Galal reviewed different international findings regarding the link between education and development. He is convinced of a link between education and development, especially for poor countries, even if it is not proven for every region in the world. When countries with the same income level are compared, then it is probable that countries with higher educational levels develop faster. In contrast, when we compare countries with the same educational levels, it has been shown that countries with a lower income level will grow faster. It seems safe to conclude that countries with low income levels benefit especially well from investment in education (*ibid.*, p. 42).

Although the scientific merits of these studies are beyond doubt, there are also some points to criticise. Their focus upon formal certificates not only disregards the potential gap between competence and certification, but also neglects quality differences. It has been shown that the link between education and development becomes clearer when quality issues are taken into account. The distribution of educational opportunities also counts: Birdsall and Londono (1997, pp. 32 et seq.) found economic growth to be supported by equal education opportunities.

For vocational education, rate-of-return analyses are quite rare. It is rather difficult to compare different systems of VET on an international level, and, even within one country, comparison between VET in schools and in-company-training seems nearly impossible. External effects are even more significant than in general edu-

cation, given the fact that the outcome of VET depends largely upon the general education an individual acquired before (King, 2006, pp. 18 et seq.).

On an international level, Psacharopoulos collected data about private and social returns on investment in academic versus vocational education. Studying more than 20 countries between 1975 and 1992, he found that social returns on investment in general education exceed those in vocational education (15.5% for general education; 10.9% for VET), whereas this relation is inverted when it comes to private returns (10.6% for general education, 11.5% for VET (edstats, 2009, p. 1).

Since the 1980's, this correlation has been termed the 'vocational school fallacy' – a syndrome which describes the fact that VET is more expensive on each level of the educational system and therefore secondary schools are poorly equipped with personnel and facilities. If furthermore we take into account that learners often choose VET only if the access to academic education is not possible for them, it can easily be understood why rates of return in education stay on a rather low level when VET, and even more when technical or agrarian VET, is concerned (see Orkodashvili, 2008, p. 6).

Psacharopoulos himself explains the low return rates as a consequence of the strong links between general and vocational education. Together with Velez he found strong income-effects of VET for Columbia if the workers also had reached a minimum of eight years of formal general education (Psacharopoulos, 1994, p. 1328; see also Mingat and Tan, 1988). The effects of VET seem to be strongly linked to the existence of a functioning system of general education. And last but not least, in many countries certificates of VET are not strongly linked to the competencies the labour market would expect.

National Qualification Frameworks as a Solution?

So, if the gap between 'embodied' and institutionalized cultural capital seems to be so important, wouldn't it be the easiest way to enhance the link between competencies and certification? The possibility of certifying 'what a person knows and is able to do' lies in labour market transparency as well as in transparent information for potential learners about the aims of learning programs.

In more than 70 countries, National Qualification Frameworks (NQFs) are implemented in the hope of improving access to the formal education system, bringing about a better match between training and the labour market and a smoother acknowledgment of informally acquired competence. NQFs are supposed to support mobility in education and labour markets. Mismatches between the education sys-

tem and work could be minimized if NQFs enhanced flexible curricular responses to labour market requirements.

Qualification frameworks are supposed to organize certification into competence levels. Systematically, this means a de-coupling of the institutional system and certification.

The smallest structures of national qualification frameworks are the competencies themselves. Each can be understood as an observable and measurable unit containing knowledge and skills as well as some background information (or: underpinning concepts). Qualification frameworks such as the EQF or many NQFs distinguish between competency levels according to their levels of responsibility and complexity.

But the crucial point of 'Competency Based Education and Training' in the perspective developed in this article, is their focus upon competence itself. Competency-based certification aims to provide recognised qualifications for competency as such. The time and institution where the competence was acquired do not matter. Whereas traditional certificates tend to reflect the social and institutional background of the qualifying institution, competence-based certificates express 'what a person knows and is able to do'. We have seen that even in this focus on 'embodied' cultural capital, social inequality is not excluded. Persons with a high social status may have better opportunities and time to invest in competence development. But nevertheless NQFs aim at minimizing the differences between 'embodied' and institutionalized cultural capital by making competences explicit and independent from institutional background.

Although the idea seems to be convincing, important problems arise when it comes to the world-wide implementation of NQFs, with social acceptance being the most difficult of these. Employers and learners seem to be equally sceptical about NQFs. Even in countries with a large trajectory of NQF, they are not very popular and only few persons, mostly with lower levels of competence, take part in the system.

Certification of competences acquired in the informal sector which do not represent a whole qualification scheme, seem to be of especially low importance. In Great Britain, National Vocational Qualifications (NVQs) are often used for internal promotions. The relevance for the external labour market seems to be rather low (Kuhlmann, 2002, p. 65; Handley, 2003).

Young, for example, is rather critical about the NVQ-system in the United Kingdom. He sees no significant success in this system regarding the education and training of workers. Why a system with such serious difficulties should have served as model for so many countries, seems rather strange to him. Young proposes implementing NVQs within a broad institutional context. Employers, educational

institutions and universities should be invited to develop NQFs thereby improving acceptance and trust in society (Young, 2009, p. 25).

Allais distinguishes between different types of NQFs:

1. *Communication Frameworks* (e.g. Scotland) take existing educational systems as their starting point and try to make them more transparent and understandable by enhancing their inner logic and access.
2. *Reforming Frameworks* (e.g. Ireland) also link their framework to the existing institutions, but try to reform them. Reforming Frameworks try to enhance quality and accountability or close gaps between labour market and VET.
3. *Transformational Frameworks* (e.g. South-Africa) are implemented in order to realize radical reforms of the educational system. A vision of a better education is the starting point of the reform.

The further the NQF withdraws from traditional institutions in a country, the greater seem to be the problems. Whereas Communication Frameworks are relatively well incorporated, reforming and transformational frameworks suffer from deep mistrust and scepticism (Allais, 2007, pp. 34 et seq.).

Raffe (2009) amplifies this concept and defines voluntariness, loose coupling, institutional embedding and velocity of implementation as important criteria for NQFs as well. A successful NQF – so he claims – ‘depends on familiarity, understanding, cultural change and trust. These can only develop over time, with experience of the framework’ (Raffe, 2009, p. 2). Implementation of NQFs should be understood as an iterative process in which anomalies and contradictions have to be negotiated and solved pragmatically.

In his perspective, NQFs should be open enough to permit different forms of learning. He concludes: ‘A NQF on its own is a weak driver of change. Its implementation and impact depend on complementary policies and other drivers to promote its use. ...NQFs can be used to change Educational Systems, but only if the change is long-term, incremental, iterative and reasonably consensual, and if the NQF is complemented by other change agents’ (ibid.).

Although this criticism is rather plausible, I suspect that the (relative) failure of the NQF in a country like South Africa cannot be attributed only to the characteristics of this concept. Nearly every educational reform takes risks in countries with poor educational structures, important social problems and low investment rates in education. It seems quite clear to me, that NQF under these circumstances may fail just as any other educational reform could have failed. If NQFs meet the same or other problems in countries with a high institutional density, participation and a low implementation velocity remains to be seen.

In summary: For about 15 years many countries have put resources and energy into the development of a CBET-oriented framework. The focus on competence and outcome has been expected to overcome the obvious mismatches on the labour market and raise participation rates in Technical Vocational Education and Training (TVET). Today the obstacles to this policy strategy seem more obvious. Although the reluctance of academic institutions to accept vocational training certificates was obvious from the beginning, it was supposed to decline by the enthusiasm for higher transparency, equal access and mobility. Nowadays the deep roots of those barriers have become clear. Therefore I propose taking a deeper look into the social structures of power linked to the educational system. Is the assumption true, that it is especially difficult to implement a NQF in educational systems with poor institutional structures? Certificates represent the institutional aspect of competence and are therefore intimately linked to power relationships in society and the labour market. These power structures are especially tangible in the academic institutions and – in the case of Germany – in dual system certificates.

Meeting Institutionalized Cultural Capital – Power and Competence

Germany is not suspected of having weak institutional ties to VET. As school-systems and employers cooperate in the dual system, our whole VET structure is built upon corporative and consensual agreements. Political bodies, information systems, examination boards – they all consist of carefully balanced tripartisan members and are obliged to integrate different interests and motives. Whereas universities can count on more freedom and autonomy, the VET system is highly regulated by federal law, school laws on a decentralized level, norms within corporations and chambers of commerce and communal regulations. Also educational policies are always negotiated between representatives of federal state, decentralized school representatives, employers (industrial as well as small and medium enterprises) and trade unions. This structure is grounded upon a long history of VET and strong, culturally-bound beliefs in the *Beruf* – i. e. a non-academic form of professionalism with deep structural and cultural roots. Since the Lutheran and Calvinistic Reformation, *Beruf* has also had religious connotations (*Berufung*), and can be identified with an inner calling. According to its origin in crafts and guilds, *Beruf* also means to fulfil the social and political demands of society.

As the curricula are also constructed and authorized by tripartisan bodies, they are supposed to meet labour market needs especially well. These needs themselves

tend to be shaped and expressed in the form of *Beruf*, because this design of competences is a given in German society.

Beruf offers social-cultural patterns for biographies, even if those biographies nowadays (and perhaps never) are not at the reach of every member of society. For many people the linear succession of school, training and uninterrupted work are not a given any more. Nonetheless, the cultural pattern of *Beruf* is the main yardstick for comparisons and biographical constructions.

When Germans talk about *Beruf*, they are talking about social patterns which organize socialization, biographies, social status and labour market chances. But they also talk about social exclusion and the difficulties of establishing oneself in society when the entrance to the dual system cannot be made. They talk about the 15% of each age group who leave the school- and training system without adequate qualifications. In a society where access to the labour market is so closely linked to *Beruf*, these young people have low opportunities to make their living in formal labour markets and even fewer opportunities to participate in VET as adults.

Therefore, if German society is aware of the problems of social exclusion and educational inequalities (and it is!), the linkage of competences and a logical and transparent certification system such as NQF should be relatively easy. It should be even easier, if we take into account the studies of Raffe (see above) who claimed that a low level of educational structure such as in South Africa makes the introduction of NQF easy, but hinders its implementation.

I will not describe the difficulties and debates about EQF and NQF in Germany in detail in this article. They have been published often (e.g. BIBB, 2007; BMBF, 2007; Brunner and Diekmann, 2007; DGB, 2005; Drexel, 2005; Euler and Severing, 2006; Gehmlich, 2008). Suffice it to say, that the introduction of the NQF-system is proving to be slow, complicated and not very popular.

There may be explanations for this problem which go further than the criticism of Young, Raffe, Allais and Wheelahan. My suspicion would be that many of us were so enthusiastic about the rationality of linking 'embodied' competences to formal certification and thereby making our educational systems more transparent and flexible, that we forgot about a really important glue of educational systems: power.

In a world of perfect equality without accumulation and inheritance of capital, it would be possible for everybody to enter any social position anytime. Only the fact that it needs time to acquire competence would inhibit such a fluent interchange of positions (Bourdieu, 2005, pp. 54–55).

Culture as well as school qualifications can be understood as a form of capital. They are the result of investment (economic as well as psychological) and have to pay off. Those who have qualifications in their hand will defend their capital and its

benefits by defending the institutions which guarantee the value of their certificates (Bourdieu, 2005, p. 23).

As described above, human capital theorists focus on the correlation between investment in education and economic benefit. Bourdieu criticizes this perspective as too one-sided. Human capital theories subscribe to the idea that investments in education have the same meaning and the same costs for every member of society. But this is not the case. Bourdieu enlarges this perspective by showing the 'best hidden investment' in education. It consists of the transmission of cultural capital within families who invest in education from early childhood thus offering their children extra time to acquire education. Education systems sanction this inheritance of cultural capital and thereby reproduce social structures.

Whereas this concept is well known for general education, it has not been brought to the attention of vocational educators very intensely. VET always was known as the second chance of education for working class children. It was meant to integrate young people into the labour market and to offer educational opportunities for those who could not benefit from higher education. But the more VET-degrees are gaining ground in the education system and the more young people are kept out of the VET-system without chances to enter the labour market, the more it becomes clear that power relations play an important role here as well. Whoever achieves recognized higher education qualifications is going to defend them against intruders. In countries where only academic professions are regarded with high respect, the holders of VET-certificates are perceived as intruders on this privilege. In countries where formal VET is considered equally valuable, the defence turns against informally acquired or otherwise institutionally less protected competence.

Neo-institutionalists offer another explanation to show the unintended and irrational side-effects of certification. Meyer Rowan, for example, shows the double tasks every organization is bound to accomplish: to be productive and to be socially legitimated. In order to do the latter, organizations use one silver bullet: they try to be similar to other organizations, thereby enhancing legitimacy and access to resources (Kühl, 2009, pp. 43 et seq.). These similarities can be in terms of strategies or processes, but they can be symbolic as well. Meyer Rowan speaks of isomorphy when he tries to describe the phenomenon of organizations becoming increasingly similar to each other (Kühl, 2009, p. 46). In order to protect legitimacy it is necessary to eliminate inconsistencies. This is possible by three mechanisms: denial, fragmentation and avoidance. In saving the face of the organization, trust in this organization can be protected and myths sustain (Kühl, 2009, pp. 48–49). Often organizations incorporate procedures well known in society to enhance their legitimacy and capacity of survival. They do this rather independently from the capa-

bility to improve actual productivity. Products, services, techniques, policies and programs work as mighty myths used by organizations ceremonially even if they contradict effectiveness (Kühl, 2009, p. 29).

The popularity of neo-institutionalist concepts is easily explained by its plausibility and the everyday life experience of everybody working in organizations. We all know efforts and rituals seemingly invented only for the purpose of making the organization itself more legitimate without a significant effect upon the productive work the organization is expected to do. But in the case of certification, legitimacy proves to be even more at stake: the certificate itself is a symbolic feature of the organization as well for its owners! So not only does the institution try to defend the value and uniqueness of its certificate, but everybody who acquired this qualification from this organization will defend the value of the certificate as well as of the institution it stands for.

Conclusions

In the first part of this article, I tried to show that there is an important difference between competence as such 'embodied' cultural capital (as Bourdieu calls it) and formal educational qualifications. Whereas it is difficult to find empirical evidence for the positive effects of competence as such, it is plausible to assume it to be the main factor for increasing productivity. On the other hand, the vast empirical proof of correlations between certification and higher income which support human capital theory has to be questioned with regard to its proper meaning. It is likely that certificates account for only parts of an individual's actual competency. They do show, however, that the owner graduated from a certain institutional background and can serve as a signal of social class.

In this perspective, the efforts of many countries to implement a NQF have to be viewed in a different light. Amongst other things, they can be understood as an attempt to close the gap between embodied and institutionalized cultural capital, thereby reducing the effects of educational inequality.

Allais, Young, Raffé and others (see above) have tried to explain the obvious difficulties of NQFs in many countries as the lack of linkage between the new certification structures and existing institutions. They argue that NQFs should take traditional and trusted institutions into account and try to elaborate those structures into a more competence oriented pathway.

But the difficulties EQF and NQF face in Germany tell another story. The participation of a strong institutional network in the implementation of a NQF in Germany

has until now not been shown to be very convincing either. This article focuses on the power aspect which is inherent to institutionalized certificates and argues that traditional institutions rely upon powerful socially vested interests in order to defend their certificates against intruders without institutional backgrounds.

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Bridging the Gulf Between the World of Work and the World of Learning: Vocational Education and Training in Comparative Perspective

Kathrin Höckel

Vocational Education and Training: A Diverse World

Comparing and evaluating vocational education and training (VET) systems internationally is a challenging task. National systems of VET are very diverse both in terms of their characteristics as well as in terms of their relative importance in the education system and compared to other forms of post-compulsory education. Indeed, in some countries it makes little sense to refer to VET as a single 'system' because it only exists in form of vocational modules in general post-compulsory education.

The OECD (2010a, p. 26) defines VET as

... designed for, and typically leading to, a particular job or type of job. It normally involves practical training as well as the learning of relevant theory. It is distinct from (academic) education – for example in mathematics, which is relevant to a very wide range of jobs. ... Education and training for some high level professions such as medicine and law meets the definition even though they are not normally described as VET. Initial VET includes programmes mainly designed for and used by young people (we propose those under 30) at the beginning of their careers and commonly before entering the labour market. It includes many upper secondary and tertiary programmes. Continuing VET is all other sorts of VET, including enterprise training of employees and training provided specifically for those who have lost their jobs.

According to this definition, many countries have extensive vocational programmes at upper secondary level while others, particularly English-speaking countries, tend to postpone such programmes to post-secondary level. In Germany for example, 60% of young people undertake a vocational programme at upper sec-

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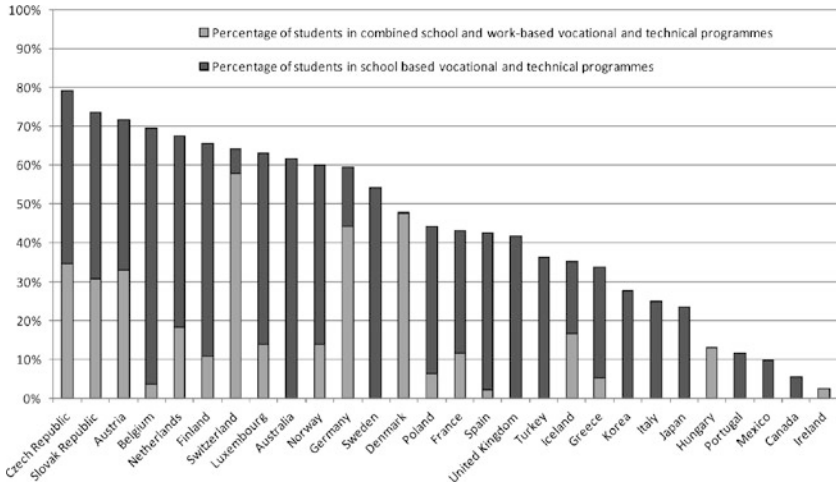


Figure 1 Vocational education and training as a share of the upper secondary sector (ISCED 3), 2006 (Source: OECD (2008, Table C1.1, p. 331))

ondary level. In Ireland there is little VET at upper secondary level, but an extensive system, including apprenticeships, above that level (see Figure 1).

The provision of vocational programmes also varies. Approaches range from well established apprenticeship systems – where learning is divided between vocational schools and the workplace and where theory and practice complement each other – to entirely school-based forms of provision where occupation-specific learning takes place in workshops and is only occasionally complemented by short internships or work shadowing. There are also models where young people gain work experience informally outside the school system in part-time jobs and through job rotation (for the US see Harhoff and Kane, 1997). The United States has an almost unique set of arrangements at upper secondary level because much of the vocational training is designed as career exploration rather than preparation for a specific job.

Within families of VET systems there are also striking variations, for example the different approaches to apprenticeship in Switzerland and Germany where more emphasis is put on the productive contribution in firms and the learning experience on the workplace, respectively. Also, workplace training can be scheduled two to three days a week, in form of blocks of several weeks or – as it is the case e.g. in Norway – for two years in a row following two years of school-based preparation.

The OECD Review of Vocational Education and Training

Despite this heterogeneity there are some criteria to evaluate the quality and efficiency of VET systems from a comparative perspective. The two key questions which guide the comparison of VET systems in this paper are first, how well do VET systems prepare young people for the labour market and secondly, which system elements seem to be particularly conducive to promote learning for jobs.

In a four year programme the OECD has carried out its first international comparative study of vocational education and training. The work programme included the gathering of descriptive evidence on VET systems through an international questionnaire (Kuczera, 2010), analytical work on various issues including the costs and benefits of VET (Hoeckel, 2008) and carried out individual policy reviews of vocational education and training in 17 countries and states. The final synthesis report *Learning for Jobs* was published in 2010 (OECD, 2010a); it is the basis for this article.

Some VET Systems Prepare Young People Better for the World of Work Than Others

VET systems have a twofold task in developing the skills for twenty-first century economies. The large numbers of unskilled jobs which existed a generation ago are fast disappearing, particularly in OECD countries, since they are so vulnerable to competition from low-wage countries. And, although general education also has its claims, vocational education and training is often the right vehicle for providing skills to those who would otherwise lack qualifications and ensuring their inclusion into the labour market. At the other end of the spectrum, since OECD countries cannot compete with less developed countries on labour costs, they need to compete in terms of the quality of goods and services they provide. This requires a highly skilled labour force, with a range of mid-level trade, technical and professional skills alongside those high-level skills associated with university education.

The global economic crisis of 2008/09 reinforced attention to these skills issues, as rising rates of youth unemployment placed the spotlight on the capacity of education and training systems to effectively transition young people into jobs. Figure 2 compares unemployment rates among young people with those for the adult workforce as a whole. This is a measure of youth labour market problems: in all countries young people are more likely to be unemployed, but their relative disadvantage varies across countries. In Germany, the Netherlands and Canada 20–24 year-olds

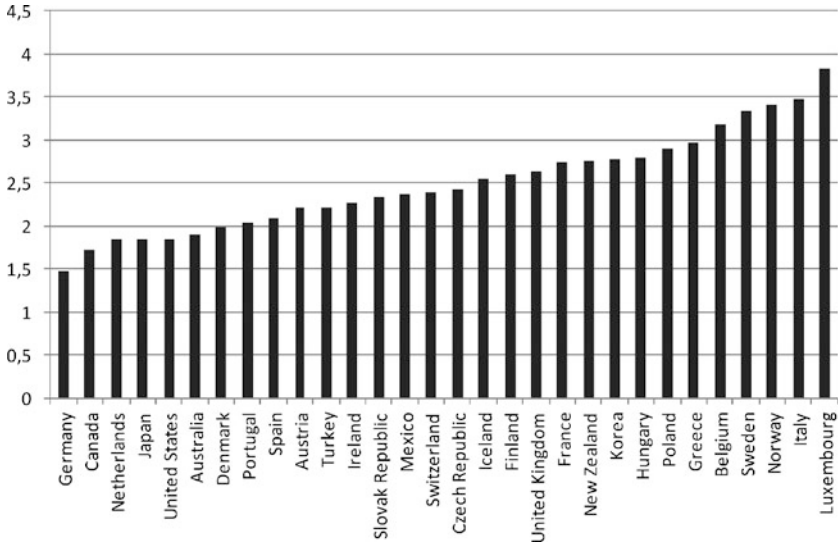


Figure 2 Relative unemployment of young adults. Ratio of the unemployment rate of 20–24 year-olds to those of adults (aged 25–64), 2009 (Source: OECD Stat Extracts. <http://stats.oecd.org/Index.aspx>)

are only slightly more likely to be unemployed than older workers, suggesting that in these countries young people have fewer problems obtaining their first jobs than in many other countries.

VET systems interact with various context factors, in particular labour market regulation. Quintini and Manfredi (2009) discuss different transition patterns from school to work across OECD countries. They note that in countries with regulated labour markets and strong apprenticeship systems, such as Germany, about 80% of school leavers succeed in integrating into the labour market. Such countries contrast with countries with regulated labour markets but without strong work-based training integrated into the formal school system, such as Italy and Spain where more than a third of young people end up in unemployment or inactivity. The German transition rate is impressive, especially the transition rate of graduates from vocational high school who have the same employment rate as tertiary graduates at the beginning of their career (OECD, 2010b). But their employment perspectives worsen over time if compared with holders of tertiary degrees (see e.g. Ludwig and Pfeiffer, 2005). Countries with regulated labour markets but without strong vocational education encourage employers to hire young and inexperienced people by

lowering employment costs for this population. Consequently, many young people enter the labour market with temporary contracts. In some cases this has led to the development of a dual labour market, with a sector of permanent and well-protected jobs divided from a secondary sector of temporary and less secure employment (see e.g. Maurin, 2009 on France).

Making Optimal Use of the Workplace for Learning

The above analysis of youth unemployment points to the fact that VET systems with a strong workplace element help facilitate the transition of young people from education to their first job. Workplace learning includes a diverse set of practices:

- *Job shadowing*: Very short periods of time – typically days – in which students ‘shadow’ a worker to learn about their job. It often involves younger students and serves the purpose of career exploration.
- *Service learning*: Voluntary work by students, typically in non-profit organisations, designed to provide a service and at the same time to provide a learning opportunity to students. In Belgium-Flanders, for example, some students in part-time VET participate in such learning.
- *Internships*: Short periods of time – typically weeks or months – in which students attend workplaces and undertake work there, typically for zero or nominal wages. They may be governed by a special contract. Students in school-based upper secondary VET may participate in internships in various OECD countries, for example in Austria, Belgium-Flanders, Chile, Hungary and Mexico (although typically not all VET students participate).
- *Apprenticeships*: More structured long-term workplace learning, typically over a period of years, leading to a qualification.

The Advantages of Workplace Training for Students and Employers

While the effectiveness of workplace learning depends on the type and intensity of provision and a few weeks of internship or job shadowing do not produce the same learning effect as a full apprenticeship, four major advantages of training in workplaces rather than in VET institutions can be identified.

Workplace Training Provides a Strong Learning Environment

Workplaces provide a strong learning environment because they offer real on-the-job experience. This allows students to acquire both hard and soft skills. The acquisition of hard skills sometimes requires practical training on expensive equipment. Rapidly changing technologies mean that equipment quickly becomes obsolete and VET institutions are often unable to afford modern equipment. Workplace training will therefore often be more cost-effective, since it makes use of equipment already available in firms. Firms also employ the people who understand how to use the latest equipment and can explain the associated techniques. There is good research evidence to show that many soft skills – like problem-solving, conflict management and entrepreneurship – are more effectively learnt in workplaces than in classrooms and simulated work environments.

It Improves the School-to-Work Transition

Workplace training also provides an opportunity for employers and potential employees to get to know each other in hands-on work situations, in relation to co-workers and clients. Research shows that the employee characteristics on display in contexts including pressure and conflict are critical to job performance, so that employers learn about the performance of trainees and apprentices as potential recruits. Since other potential employers cannot readily observe these characteristics, an employer taking trainees is in a position to recruit the best from among them, and use their information advantage to pay salaries below the individual's productivity (Acemoglu and Pischke, 1998; 1999a). Evidence from various countries suggests that this recruitment benefit is one of the major motives for employers to offer workplace training (e.g. Clark, 2001; De Rick, 2008). The recruitment benefit to employers depends on a number of labour market characteristics and regulations (see Acemoglu and Pischke, 1999b):

- Where labour turnover and incidence of poaching is high, so that apprentices only stay briefly following recruitment, the recruitment benefit is reduced.
- Where wages are very flexible and job security is limited, it is possible for employers to take on recruits at low wages and then, once employee performance becomes clearer, to reward the most productive and to lay off weaker ones. This means that it is not vital to establish productivity in advance of recruitment, and the recruitment benefit of work placements is less.

- Conversely, where wages are inflexible, perhaps determined through collective bargaining, and where there is a high level of job security, a new recruit represents an expensive long-term commitment, carrying a substantial risk. Identification of the most productive workers in advance of formal recruitment is therefore more advantageous and the recruitment benefit is greater.
- Where they exist, national service requirements create a gap in time between initial workplace training and subsequent entry to the labour market, and may make it less likely that training companies can hold on to their apprentices as recruits. In workplaces students can learn about the day-to-day reality of an occupation (e.g. the type of tasks involved, working conditions) and about at least one potential employer.

Workplace learning provides critical information to students about the line of work they might or might not wish to pursue. It can thus be an important part of career guidance, especially when students participate in a number of different placements before making choices about their education and training. Short periods of workplace learning, including those for younger students typically service this purpose. Subsequently, when students participate in placements within vocational programmes, the placements can help students to make choices about specific types of work and employers.

Apprentices Can Make Productive Contributions to Their Training Firms

Apprentices and trainees who undertake useful work generate a productive benefit for the employer. This benefit tends to be important in the case of apprenticeships (evidence for Switzerland and Germany in Schweri et al., 2003, Mühlemann et al., 2007). Such a benefit is also possible in more substantial internships, but more difficult to obtain in very short work placements (unless trainees perform only unskilled tasks, but that would be a poor learning experience). Their contribution typically increases with experience and depends also on how their work is organised. In Switzerland, in two-thirds of cases examined in one study, the productive contributions of apprentices were more than or at least equal to the costs of training. Wolter and Schweri (2002) also showed that the one-third of firms which did not derive a net benefit at the end of the apprenticeship period nevertheless benefited in most cases because of the recruitment benefit – they were able to keep the VET graduates they had trained. In Germany, the productive contribution is much less (Beicht et al., 2004) because German apprentices spend less time doing productive work at

the host company than Swiss apprentices (Dionisius et al., 2008). Such a productive contribution is only occasionally possible from VET students in other contexts – usually those most closely resembling real workplaces – for example in the many catering colleges which operate as restaurants for members of the public.

Employer Willingness to Engage in VET Provision Signals Labour Market Needs

Finally, employer willingness to offer workplace training places is an indicator of their support for the associated vocational programme. Employers will be particularly keen to offer apprenticeships in contexts where they have labour shortages – both because apprentices contribute to production and because they may be future recruits (i.e. both the production and the recruitment benefits will be high). Unlike school-based VET, apprenticeships are therefore automatically linked to labour market needs. The ‘market’ in apprenticeship places becomes a domain where student career objectives have to be balanced with employer interest – a dress rehearsal for the real labour market. Even where short work placements are all that is involved, as in some vocational programmes – for example in Sweden – the placements can serve to signal the skills needs of employers.

The Costs and Benefits of Workplace Training

Despite the advantages associated with workplace training, many countries struggle to engage their employers because the associated gains are not always transparent whereas costs are immediately evident. They are of two main kinds: the apprenticeship salary which varies markedly across systems and the resource costs, including the time of experienced employees, remunerations of training staff, teaching materials and administrative costs, mistakes by inexperienced apprentices and wasted resources (Richardson, 2005; Rauner, 2007). These costs are dependent on the quality of apprenticeship training provided, covering issues like whether special training is provided to supervisors, whether apprentice supervisors have some additional status and wages to reflect their role.

Some countries are getting better at estimating costs and benefits. In Switzerland half of firms with apprentices either have formal mechanisms to monitor the cost/benefit ratio of their training, or were about to introduce such mechanisms in 2004. But many firms lack such mechanisms and rely instead on more sub-

jective perceptions of the utility of training (Davidson et al., 1997; Schweri et al., 2003). Such systematic studies into the costs and benefits to employers of taking apprentices can be used as a means of encouraging employers to take trainees and apprentices by demonstrating to them the real economic returns. In addition, some countries have introduced financial incentives (including tax breaks, levies etc.) to shift the cost-benefit balance and encourage employer engagement in workplace training provision.

Balancing Workplace and Other Training Locations

Despite all the advantages of workplace training, it needs to be supplemented by the use of other training locations, for a number of reasons. Vocational theory is often best learned away from the workplace in a classroom setting. Also, local employers may not always be able to provide all the required training. Variations between firms – even within the same sector – in terms of products, markets, clients and technology mean that learning opportunities are not the same for all VET students in workplaces. Off-the-job training can fill potential gaps in the skills provided. Finally, some practical skills can be more effectively learnt off the job:

- Where equipment is expensive or dangerous, simulated work environments may be more cost-effective. For example, training train drivers in simulated cabs is more cost-effective than on-the-job training with real trains (and associated line closures).
- Off-the-job training can operate at a slower pace and provide students with time to initiate their skills (Robertson et al., 2000).
- Economies of scale may mean that it is best to teach some basic practical skills collectively in training workshops (whether in a public VET institution, or in a training centre funded by a group of companies) rather than in the workplace.

Balancing General and Occupation-specific Skills in Vocational Programmes

Another important balancing act VET systems have to manage is the share of general and occupation-specific teaching in vocational programmes. Students need both a set of practical occupational skills that will make them immediately employ-

able and productive, and will therefore facilitate their entry into the labour market, and a set of broader transferable skills, including numeracy, literacy, team-working, communication skills, flexibility and the capacity to learn new skills. Some of these skills underpin other learning including the learning of practical vocational skills. They also build into an individual's skill-set the capacity to adapt to changed circumstances and skill requirements. These transferable skills are necessary because the individual may move jobs, or make a career shift, and they underpin further learning.

Various studies highlight the importance of general content in the curriculum. In modern economies an increasing number of jobs, including blue-collar jobs, require sound generic skills. A study from the United States (Autor et al., 2003) suggests that technological change (in particular computerisation) has made problem solving and complex communication skills much more important in the labour market. The development of these skills is underpinned by good literacy and numeracy skills (Levy and Murnane, 2004). More generally, learning – both in initial VET and in lifelong learning – is difficult without strong basic skills. Labour markets change rapidly and often unpredictably. As virtually all workers will need to acquire new skills during their career, literacy and numeracy are particularly valuable in the long run (Kézdi, 2006). In sectors facing rapid technological change, the ability to learn is crucial and the generic skills underpinning this ability are highly valued by employers (Ghost, 2002; Köllö, 2006; Smits, 2007). In low-technology industries and at lower skill levels generic competences may be less valued by employers, but such workers need to be able to switch jobs, since they are precisely the ones at risk of job loss due to diminishing job opportunities (Smits, 2007). Strong literacy and numeracy skills are associated with better performance on the labour market. Data from the International Adult Literacy Survey (IALS) show that people with weak literacy skills are more likely to be unemployed, even if other background variables (educational attainment, age, gender) are taken into account (Figure 3). An Australian study (Chiswick et al., 2002) found that about half of the total effect of education on labour market outcomes (labour force participation, unemployment) can be attributed to literacy and numeracy.

In OECD countries many students following vocational tracks at upper secondary level continue into tertiary education. This requires sufficient emphasis on core literacy and numeracy skills not just to ensure a basic minimum for all, but also to realise the full potential of able students in vocational programmes to pursue advanced educational courses.

Employers are in a strong position to judge what mix of skills is optimal for particular occupations, and it therefore makes sense for employers to play a key role in establishing the curriculum. However, if employers have too dominant an influence,

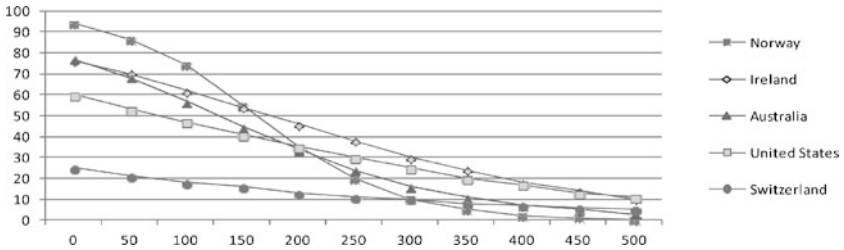


Figure 3 Probability of unemployment and literacy proficiency. Probability of being unemployed according to prose literacy score, for men aged 16–25 with less than upper secondary education, 1994–1998 (Source: OECD and Statistics Canada (2000, p. 66))

programmes may overestimate the importance of occupation-specific skills and give insufficient attention to the generic skills needed for mobility between firms and between occupations (Smits, 2007). The interests of employers depend on the level at which they are expressed. While locally employers may not wish their employees to have strong transferable skills since this may increase labour turnover, collectively employers have an interest in a flexible and adaptable labour force. Trade unions can play a useful role in counter balancing a too narrow focus on occupation-specific skills often promoted by employers and should therefore also be involved in the design of VET programmes and curricula.

Preparing and Developing Professional VET Personnel

Teachers and Trainers in Vocational Education and Training Providers

The Problem: Ageing Workforces and Limited Workplace Experience

In many OECD countries, the teacher and trainer workforce faces two interconnected challenges. First, the workforce is ageing. Many European countries face a shortage of vocational teachers and trainers in VET institutions, or expect to face such a shortage soon (Cort et al., 2004). In Sweden, for example, more than half of the vocational teachers and trainers in upper secondary schools are over 50 (Kucera et al., 2008). The ageing VET workforce is also a challenge in Australia (NCVER, 2004).

A second challenge is ensuring that trainers in VET institutions – and to a lesser extent teachers of VET theory – are familiar with the fast-changing requirements of modern workplaces. Although empirical evidence on this issue is scarce, a review of existing evidence in the United States suggests that having relevant work experience is helpful, particularly to novice teachers and trainers, since it provides them with a context and increases their confidence in teaching for their occupation. However, workplace experience above a certain threshold level appears to have no further positive impact on teaching effectiveness, so the nature of work experience may be more important than its length (Lynch, 1998). Keeping the knowledge and skills of teachers and trainers in VET institutions up-to-date is a challenge. An Australian study (Harris et al., 2001) found that only 28% of full-time and 55% of part-time trainers rated their technical knowledge as being up-to-date.

Potential Solutions

Diversified Routes into the Profession

Where existing trainers in VET institutions lack workplace experience, more people equipped with practical workplace skills need to be encouraged to become trainers in such institutions. This will both enhance recruitment and help to ensure familiarity with workplaces on the part of trainers. Another advantage of equipping trainers in VET institutions with work-related skills is that employers tend to attach more value to vocational training where the trainers are required to have work-relevant experience (Dalton and Smith, 2004). Effective and diverse pathways of entry into the vocational teacher/trainer profession may help with this. In many countries there are staff who work part-time as trainers and part-time in industry. Such arrangements offer particular benefits because these trainers remain in close touch with the changing needs of the modern workplace, and this pattern of working may also appeal to those who wish to develop a career as a trainer but retain a job in industry. Skilled workers may also be hired from companies on short-term contracts to fill trainer vacancies. Such arrangements exist in Norway, where VET institutions and local employers cooperate to ensure an adequate supply of vocational trainers.

Flexible Provision of Pedagogical Training

The qualifications required to practise as a teacher/trainer vary among OECD countries, with requirements in some countries (e.g. Korea) being higher for vocational teachers than for trainers. Too onerous requirements may discourage people in mid-career from becoming a vocational teacher or trainer. Allowing skilled workers to acquire their pedagogical competences in a flexible way (e.g. distance learning, recognition of prior learning), helps to encourage skilled workers to practise

as vocational teachers/trainers. In Switzerland, teachers of general subjects in VET institutions are required to take an additional course to ensure that the subjects are made relevant to the needs of VET students. For those who have a school teacher's certificate at upper secondary level this involves 300 learning hours. The institution which commonly provides these courses also serves as a centre of expertise on the training of VET teachers and trainers, and in the professional training of VET administrators.

Trainers and Supervisors of Workplace Learning

The Value of Wider Pedagogical Skills

While VET institutions often want to improve their trainers' familiarity with the workplace, the concern in industry is more often to equip the supervisors of apprentices and trainees with the necessary pedagogical skills. Supervisors play a key role: they pass on practical skills, but also transmit theoretical knowledge, help apprentices and trainees get used to the social codes of the workplace, and more broadly, are responsible for the management of apprentices and trainees (Gérard et al., 1998). The capacity to convey a practical skill involves more than the ability to exercise it. Teaching requires special competences. A study from Australia found that apprentices highly valued the social skills of supervisors such as communication skills and the capacity to deal with conflicts, but that many supervisors felt they lacked the skills to respond to these expectations (Harris et al., 2000). A study from the United Kingdom (Evans et al., 1990) found that supervisors without specific training tend to focus on occupation-specific skills and neglect broader social competences. Kirpal and Tutschner (2008) in a study of trainers in Europe found that trainers often perceive supervising as an additional task on the margin of their main job and that companies that do not distinguish trainer responsibilities from other tasks tend to provide fewer opportunities for their staff to develop specific supervising skills.

Evidence from various countries suggests that when apprentice supervisors receive specific training, they do a better job of developing the skills of apprentices. In Australia, workplace trainers found specific training courses helpful in developing supervising competences (Harris et al., 2000). In Germany, the suspension of compulsory training for workplace trainers seems to have had a negative impact on the quality of apprenticeships. This requirement was suspended for five years, as firms complained that it was a barrier to them offering apprenticeships, and it has only recently been re-introduced. The first evaluations of the suspension show that in companies without qualified training staff, apprentice dropout rates were higher and companies complained more about the performance of their apprentices. The social partners associated the suspension with a deterioration in the image

and quality of VET. Both training and non-training companies considered formal requirements for workplace trainers as a guarantee of minimum standards (BIBB, 2008). Training for workplace trainers may also have spill-over benefits, since the competences acquired by trainers tend to be shared within the company. This is particularly important, since regular colleagues also contribute to the learning experience of apprentices by answering questions, showing apprentices how to perform tasks, or providing informal feedback (Robertson et al., 2000).

Ensuring Minimum Standards of Trainer Preparation

In most OECD countries relevant work experience is necessary to become a trainer, but trainers are less often expected to have pedagogical training or develop management competences. Some of these latter requirements can be found in countries with strong apprenticeship systems, e.g. Austria, Germany, and Switzerland (Kirpal and Tutschner, 2008). The scale of pedagogical and other preparation should be linked to the level of responsibilities of the personnel involved in supervising students, recognising that work experience can range from a few hours work shadowing to a full apprenticeship. But the training of VET instructors and trainers should be a priority in the systems where students in vocational programmes develop a substantial part of their skills in the workplace. Some training of apprentice supervisors should therefore be obligatory. While obligatory training for the supervisors of trainees and apprentices implies additional costs for firms, it should also provide benefits to companies. Better supervision should increase the productive contribution of trainees and apprentices during the training period, improve learning outcomes and create a better pool of potential recruits for the company. In France, many small firms participate in the training of trainee supervisors: 52% of trained trainers worked in companies employing less than ten people (Gérard et al., 1998). To avoid excessive burdens on companies, minimum requirements need to be defined in a way that balances the need for quality placements.

Career Guidance

In many countries, vocational programmes start at a relatively early age and students have to make much more radical choices when choosing an occupation than when entering a general tertiary education programme. Career guidance is therefore crucial to support students' choices. Student preference can play a very important part in determining the mix of vocational provision in many countries. Rather than being something opposed to employer needs, it can, if well-guided, help to deliver a mix of provision which is in line with those needs. Career guidance has two

main elements: *career education* in which students learn about the world of work and develop career management skills through classroom teaching, and through other activities such as work experience; *individual career advice* on a one-to-one basis, providing specific advice on career decisions, either pro-actively (mandatory interviews for all) or reactively (on demand). Both elements are underpinned by *career information* on courses, occupations and career pathways. Such information is increasingly web-based. It both supports career services in schools and VET institutions and provides information directly to students.

In principle, effective guidance services can yield large returns. The evidence shows that good quality career guidance develops the career related skills, self-awareness and self-esteem which lead to rewarding choices (Hughes et al., 2002; Bowes et al., 2005). But a number of challenges need to be addressed if countries are to realise these outcomes. Staff providing career guidance are sometimes inadequately prepared for dealing with labour market issues, services may be fragmented and under-resourced, advice often lacks objectivity, relevant labour market information is not always available and career guidance initiatives are often not effectively evaluated.

Inadequate Preparation of Guidance Personnel

Career guidance personnel are very often trained in the context of psychological counselling, with a heavy emphasis on psychological dysfunction. While this background may be appropriate for supporting students with personal problems, it does not equip them to deliver advice on types of jobs, career prospects, and learning opportunities. Labour market information often receives limited attention within psychology-dominated programmes (Watts, 2009). Combining psychological counselling and career guidance services also has drawbacks. Evidence from different countries shows that professionals who have to deal with both aspects spend much of their time on the learning and behavioural problems of a minority of students; career guidance is then marginalised and tends to focus on immediate educational choices rather than longer term career planning (OECD, 2002; Fretwell and Watts, 2004; OECD, 2004). Students may be less willing to be seen knocking on a counsellor's door since they may be stigmatised as having personal problems. In the United Kingdom, the integration of careers with personally based services targeting young people at risk has decreased the attention paid to labour market issues in the training of career advisors (Colley et al., 2008) and reduced the number of students who receive career guidance (Watts, 2008).

The educational background of those who provide career advice also counts. If they have spent most of their lives in education (e.g. academically trained teachers

responsible for career advice) their experience of the wider work environment will be limited and their formal or informal advice to students may be biased towards general education and university pathways. They may be reluctant to recommend vocational courses, particularly to bright students. As one UK study reports, parents, young people and employers all considered apprenticeship as a genuine alternative to academic upper secondary education, whereas very few teachers shared this view (Skills Commission, 2009).

Fragmentation and Under-resourcing

Career guidance is often fragmented and/or delivered by multiple agencies to the same target groups. Within the school, it is often delivered by regular teachers with an additional responsibility for career guidance. This function is often under-resourced because the activity competes with the 'mainstream' teaching functions of educational institutions which tend to dominate priorities. While there are attractions in integrating career guidance into a broad curriculum, guidance may easily be neglected if only provided as an aspect of another subject. Schools often lack the capacity and expertise to deliver the quite complex demands of an integrated service (National Audit Office, 2005). Sometimes career guidance is delivered through publicly-funded employment services, but such services focus primarily on getting unemployed adults back into work and off benefits – a narrower perspective than desirable to guide the career choices of young people. Sometimes, particularly for adults, guidance is delivered through other agencies such as trade unions, employers, voluntary organisations and private-sector organisations. When resources for career guidance are lacking, one-to-one guidance may only be offered to students who seek it out, meaning that it is only utilised by those students who are most aware of its value – bypassing the most uncertain and disadvantaged students who often have the greatest needs. Higher achievers tend to be readier to seek advice and information and to have clearer ideas about their progression (Transition Review Group, 2005).

Lack of Objectivity Due to Institutional Bias

In many countries schools and other education and training institutions themselves provide information and career guidance to potential students. These career guidance counsellors may not be able to provide an objective view of all the career options or a dispassionate assessment of the labour market outcomes of their study

programmes. Furthermore, these institutions commonly have incentives to direct students towards programmes offered at their own institution even where this is not in the students' interest. Such pressures are particularly marked in systems that link school funding to student recruitment (OECD, 2004), and where there is a demographic decline in student numbers.

Absence of Relevant Labour Market Information

There are many sources of information on individual courses and occupations, but much of it is biased publicity material. In some countries, government agencies may provide objective occupational forecast information such as the US Bureau of Labor Statistics' annual *Occupational Outlook Handbook*. Although this information is all available on-line, it may still be a significant challenge for those advising students to use the information effectively. It is harder to obtain information on optimal (and possible) pathways from education to occupations, the extent to which particular courses of study lead toward desired jobs, and the prevailing wage rates and unemployment risks in different occupational fields. Labour market data are complex and often require careful interpretation. Longitudinal and follow-up data, showing what happens to graduates once they are in the labour market, are a very important guide to the value of courses, but they are often lacking.

To develop a coherent career guidance profession, independent from psychological counselling and well-informed by labour market information, it is necessary to:

- provide adequate resources for guidance and pro-active delivery;
- ensure an independent base to support objective career guidance;
- provide good sources of information about careers and courses;
- build a comprehensive framework of guidance through partnership with employers; and
- ensure that career guidance initiatives are properly evaluated.

Steering VET Systems

VET systems, to be responsive to the needs of the labour market and to promote learning for jobs need to be tightly linked to the world of work. Therefore, tools are necessary to engage the key stakeholders in VET – in particular so that employers

can explain the skills that they need, and negotiate the provision of these skills with other stakeholders. The engagement of employers and unions is necessary to ensure that the organisation and the content of vocational programmes meet the needs of employers, students and indeed the wider economy. Typically this means a set of interconnected institutions at national, regional and sectoral levels, engaging the VET system with employers in particular, with clear responsibilities for different elements in the VET system.

To be relevant for the labour market, VET provision needs to be informed by evidence. National assessment and qualification frameworks for instance bring transparency and help employers to understand which skill levels are associated with specific VET diplomas. Information on labour market needs and labour market outcomes of certain qualifications allows students to see their way through a training programme into the labour market, employers to understand what potential recruits have learnt in a programme, and policy makers and training institutions to see whether their graduates are obtaining relevant work. Better information might be provided either through one-off surveys of those leaving VET to establish labour market outcomes, or by tracking cohorts of individuals through VET into employment to map out career histories. Such data need to be supported by the institutional capacity to analyse and make use of the data – for example in national VET research centres.

Funding VET Systems

Funding of VET is a complex matter as it typically involves contributions from both private and public sources. A number of points can guide the development and evaluation of shared funding arrangements, particularly for post-secondary vocational education and training:

- As the benefits to employers vary between vocational programmes, unconstrained student choice of these programmes is unlikely to yield the optimal mix of VET provision. If, for example, engineering skills drive innovation and economic growth in a manner which is very helpful to the economy but where the benefits are not adequately captured in the wages of engineers. This might mean that the incentives to pursue engineering qualifications would be limited and there would be fewer VET engineering graduates than would be socially desirable. In such circumstances, either government or engineering employers might be justified in subsidising provision.

- Often when the benefits are shared a risk of under-provision emerges, because all the stakeholders have incentives to free-ride on the contributions of others. For example, employers might aim to benefit from government and student contributions to training without contributing themselves.
- A market in vocational education and training, with students paying the full costs of their tuition, would be likely to yield fewer skills than would be optimal, since it would only reflect the returns to students but not the wider returns to employers and the economy more broadly. For example if the cost to the student is EUR 1000, and the return to the student is EUR 800, then students have little incentive to take the course, even though, if employers also get a benefit of EUR 600 from the trained student, there would be a collective net benefit if the student took the course. One solution is for governments to subsidise fees for VET students, so that for example the student here only pays EUR 400 for the course. Alternatively, local employers could subsidise provision, perhaps by providing some of the training in the workplace.

In response to these shared benefits, a variety of funding models have emerged, involving some sharing of the costs of provision between government, student, and employer. Some contributions will be in kind, for example in terms of the time and facilities contributed by employers to workplace training, or through time off work through training. This is typical for apprenticeships where often the government covers the costs of off-the-job education and training and employers bear the cost of workplace training, including a modest wage for apprentices. Table 1 illustrates some of the different ways in which government and students share the costs at secondary level.

Whatever the national arrangements, VET funding needs to be consistent with the principles used to fund broader education. For example, if a country has fees in tertiary education funded through income contingent loans, backed by grants for low income students. In principle within that framework higher level vocational programmes might be subject to the same regime – unless there is some evidence that VET students respond in a different way, for example because they are more averse to taking on loans, or because vocational programmes lead to a higher wage premium than other postsecondary programmes. Thus in Australia, the OECD review recommended that fees for higher level VET qualifications should be levied on the same broad basis as for higher education, and defrayed through the same income-contingent loans used for higher education (Hoeckel et al., 2008).

Table 1 Who pays for VET? Percentage of upper secondary vocational programmes (Source: Kuczera (2010, p. 8))

	Programmes provided by institutions charging fees	Programmes where students are eligible for support from public funds through:		
		Tax relief*	Loan*	Grant*
Australia ^{1,2}	■■■■■	■■■	-	■■■
Austria	■	■	-	■■■■■
Belgium (Flanders)	■■	-	-	■■■■■
Denmark	■	-	■■■■■	■■■■■
Finland ¹	■■	-	■■■■■	■■■■■
Germany	-	-	■	■
Hungary	-	-	-	■■■■■
Japan	■■■■■	-	■■■■■	■
Netherlands ¹	■■■■■	-	■■■■■	■■■■■
Norway	-	-	■■■■■	■■■■■
Sweden	-	-	■■	■■■■■
Switzerland	-	-	-	■■■■■
Turkey ¹	■■■■■	■■■■■	-	-

Note: Estimated percentage of VET upper secondary programmes:

- 0%; ■ 1–25%; ■■ 26–50%; ■■■ 51–75%; ■■■■ 76–100%.

1. Fees are subject to government guidelines in public sector.

2. Most programmes, although ‘upper secondary’ in terms of ISCED level, are outside the school sector.

Putting VET in Context

Not only in terms of funding but also in terms of steering and provision VET could gain from a broader perspective. In many countries vocational education suffers from a bad status, it is perceived as a choice of last resort and as a dead end. But some countries have made substantial progress in linking the VET much better to other parts of the education system. In Switzerland and Austria, dual diplomas (combining a VET qualification with a university entrance qualification) facilitate the access to higher education. Germany has opened access to university studies to vocationally qualified. In Australia initial and continuing education are jointly steered and

provided, flexibly catering to diverse customer needs, accommodating students of all ages. Thus it provides easy access to second chance opportunities to individuals who did not gain a first qualification or who want to upgrade their skills or change their career pathway and retrain in a different occupation.

Developing the workplace training element of VET systems to integrate the world of learning with the world of work, paying attention to quality and an adequate preparation of the teaching staff and providing career guidance supported by labour market information are all important elements conducive to promote learning for jobs. But integrating VET better in the education system and creating flexible vertical and horizontal pathways will be the way forward as learning throughout a lifetime becomes increasingly important to keep pace with changing requirements in the labour market.

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International Comparative Research into Vocational Training: Methods and Approaches

Matthias Pilz

Introduction

How can we carry out comparative research in an international context, given the completely different structures, missions and issues that vocational training involves across the world?¹ How, for example, can the German ‘dual’ training system be compared with the more informal induction to the workplace common in another country? This contribution explores such questions but neither aims nor claims to be a definitive, exhaustive approach to the wide-ranging set of issues dealt with in greater detail in other contributions to this volume.

The first section outlines the basic issues in comparative educational science from the perspective of vocational education and training (VET) pedagogy, presenting and exploring research priorities and contrasting methods and approaches.

A single research approach is then selected as a case study with a view to developing a model for identifying indicators to analyse diverse training activities and establish how successful they are.

The third section uses a simplified and adapted version of the model to illustrate how it may be applied to an indicative research area – the attractiveness of vocational training. The contribution concludes with a critical perspective.

¹ Historical comparison – that is, an exploration of past and present in a specific individual country – is not the focus here, since it more properly belongs in the field of historical research. Nevertheless, if we take the broad interpretation of research set out above, historical illustrations can also play a crucial role in international comparisons in the pedagogy of vocational training and business education.

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The Theoretical Basis for Comparative Research into Vocational Training

Reflecting the fact that vocational training is defined in fundamentally different ways in an international context (explored in other contributions in this volume), we need to set aside national frameworks and conventional tools if we are to avoid 'validating' research findings – 'appropriating the other according to our own criteria', as Mathes (1992, p. 84)² puts it.³ At international level, we need a broad approach to the field of research to reflect the huge diversity in learning and teaching processes outside general education (that is, employment training or occupational skills development) and in how they are embedded structurally and organisationally (see also Georg, 1997, pp. 160–64). A comparative approach could also, for example, accommodate informal induction into the workplace.⁴

Research Aims

Fundamentally, comparative education studies and – increasingly – comparative research into vocational education and training focuses on whether 'apples can be compared with pears or oranges', to use the standard metaphor (Hofstede, 1998).

Frommberger (2004, p. 15) argues that

Research into vocational training raises issues of the diverse structures and organisational links between differing education and training systems, making it ill-suited to studies aimed primarily at establishing which national solutions are more or most appropriate when it comes to solving a particular problem that is fundamental to them all. To reach such conclusions with the aim of producing 'successful' results, we would in fact have to restrict our efforts to studies comparing apples with apples, as popular science is so fond of arguing. An international comparison of vocational education, by contrast, draws its conclusions precisely from dissimilarities. In this more limited context, comparing does not mean assuming or establishing similarity; instead, comparing means understanding, acknowledging, and accepting difference and not insisting on generally applicable conclusions.

² Original German quotations in this article are translated into English by the author.

³ In this context, it should be borne in mind that attempts to transfer the German 'dual' system wholesale to other countries have generally failed (Schmidt and Benner, 1989).

⁴ The research focus identified here is vague in certain respects. For example, it does not consider whether pre-vocational education should be considered part of compulsory school education or whether elements of adult education can and should form part of comparative research into vocational education and training. We take the view that a rigid demarcation is less helpful than a pragmatic approach that can be used in individual cases to provide a solution on the basis of concrete academic study.

The key point is, therefore, how the comparison is framed. Hörner (1996, p. 13) summarises the challenge as follows:

The comparability of two objects is not determined by their structural similarity. Logically, comparison is merely the result of establishing a relationship between two values, and that relationship is not necessarily limited to establishing similarity but can also, of course, analyse difference. In contrast to popularly belief, apples can be compared with oranges or pears, provided there is a meaningful criterion for comparison (their juice content, for example) or a criterion for establishing difference, such as the shape of the fruit.

This abstract criterion for comparison, referred to in the literature as the *tertium comparationis*,⁵ operates, then, as an intermediary between differing types of vocational training (Lauterbach, 2003a, pp. 91–98). This means that great care is needed when choosing the comparison criterion, which must derive directly from the focus for the comparison.⁶ Hörner continues (1996, p. 13 et seq.),

The level of abstraction of the criterion for comparison (*tertium comparationis*) does not determine whether the comparison itself is meaningful. In Newton's musings on gravity as a *tertium comparationis*, he saw apples and planets as equally meaningful objects of comparison. If, as is common in the comparative disciplines, we assume that *function* is a valid criterion for comparison, then establishing functional equivalence also enables us to compare things that are radically dissimilar in structural terms (one existing example compares stairs with a lift). And as far as our object of comparison – vocational education and training systems – is concerned, this means that structural similarities between two differing systems are neither an argument for comparison nor an argument against it. What is significant, however, is the value of the findings and the framing of the question.

It is important, therefore, to establish not only the comparative question prompting the research and definition of the criterion being compared but also the subject of the research, which – in the context of international comparative employment and business education – must derive from the broad educational area defined above or from an area of skills development for or in the employment field.

⁵ A prominent German-language journal of comparative research is even called *Tertium Comparationis* (<http://www.waxmann.com/index.php?id=tertium-comparationis>, accessed 6 June 2011).

⁶ There is no single answer to the question of whether a comparison can involve a single criterion or must involve multiple criteria. Depending on the level of abstraction selected for the *tertium comparationis*, sub-criteria may be useful for further exploration. And this produces a dilemma: if the criterion for comparison is too abstract, it cannot be applied directly but is, at the same time, both too concrete and insufficiently complex in its definition, requiring additional criteria for a broader comparison. Using vocational training in its entirety as a *tertium comparationis* is unlikely to be helpful in this context (Georg, 1997, pp. 157–60).

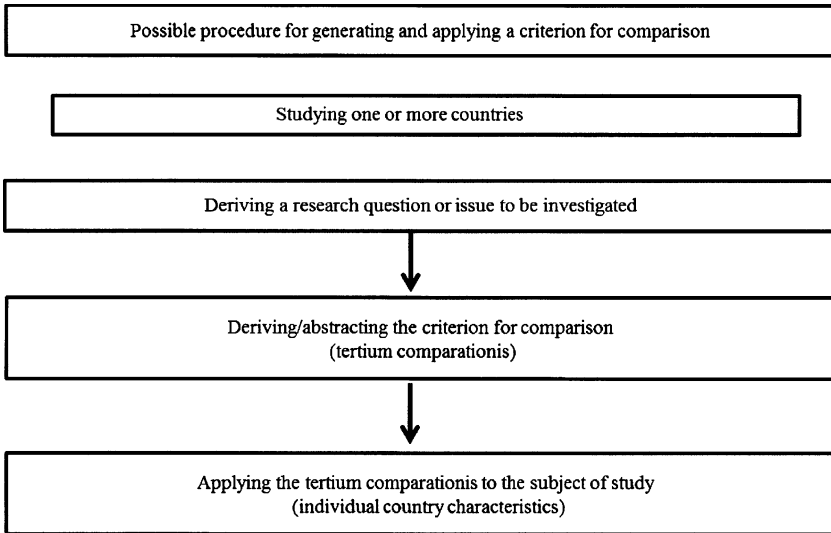


Figure 1 Research process procedure (Source: own illustration)

Integrating these three aspects schematically into a research process produces the flowchart in Fig. 1.

In this context, it is important that the *tertium comparationis* is defined as broadly – that is, as non-specifically in country terms – as possible, since if it results from cultural projection and forms the benchmark for considering the phenomenon to be compared elsewhere, then a tendency to ‘validate’ findings – that is, interpret them ethnocentrically – is almost inevitable (Matthes, 1992, p. 83 et seq. and, more broadly, Epstein, 2008).

Examples of the criteria for comparison often encountered in comparative vocational training research include the relative value of general and vocational education, the permeability of education and training systems, different forms of certification of vocational training, the cost of vocational training courses, and the extent to which such courses have currency on the labour market.

It is also vital that the object of comparison is selected carefully. Selection must focus not just on the countries to be compared but also on a more concrete, pragmatic dimension. Here, at least two aspects are significant. First, the relevant sub-area within the vocational training system must be defined: global analyses (see below) frequently fail to answer the research question in any meaningful way and also often fail the feasibility test. Second, there should be clarity at the pilot phase

as to whether what is being compared actually exists in the countries selected for comparison. This must also be open to validation by means of access to materials, sources, experts, data sets, and so on (Schriewer, 1992).

It may be helpful in focussing the research subject to identify the different levels of the VET system being targeted for comparison. Koch (1991), for example, suggests a three-level model. The *macro-level* includes the institutional structures of VET systems and their economic, social and political framework. The *meso-level* includes the concepts and models used to shape vocational training in organisational, didactic and methodological terms. The *micro-level*, finally, represents the concrete design of teaching and learning processes.

It will be evident from the above that the comparative approach is omnipresent and has become established as a tool in many different scientific disciplines, including linguistics, sociology or law. In educational science, too, the comparative approach is firmly established in international studies. It is, therefore, hardly surprising that the comments below on function derive from general education science and form the primary elements of comparative research into employment and business education only when the specific subject is identified as vocational training and specific research questions are derived.

With regard to function and associated intentions, four different approaches are regularly discussed, the *idiographic*, the *melioristic*, the *evolutionary* or *nomothetic*, and the *experimental* (Frommberger and Reinisch, 1999; Georg, 2005, p. 87 et seq.; Hörner, 1996; Lauterbach, 2003a, pp. 108–23; Schriewer, 1987, *inter alia*).

The *idiographic* function involves description and explanation of educational phenomena in other socio-cultural contexts with the aim of establishing features peculiar or unique to them.

The *melioristic* function involves analysis of one or more countries with the aim of establishing what changes could be made in the researcher's own country. This approach seeks to identify the best model (for example, by establishing best practice) with the aim of transferring it to another context.

The *evolutionary* or *nomothetic* function involves analysis of overarching models for reform, general statements, and common trends in differing countries, with the aim of ranking these approaches internationally, including the researcher's own country.

The *experimental* function, finally, involves using countries as the focus of investigation with the aim of testing hypotheses about interaction between several variables; the main aim is to establish what is universal, usually by using empirical methods.

These four functions should be seen as a fairly rough and ready initial overview. The research intention cannot be specified until a specific individual comparative

study, complete with a research question, has been framed. However, there are some criticisms of the four functions above that must be tackled at this point (see Lauterbach, 2003a, pp. 108–23 for a detailed account).

The criticism is frequently voiced, for example, that the *idiographic* function is descriptive and, therefore, that the new knowledge it offers is limited. It is also argued that there is a risk that the *melioristic* function can, for example, mask prevailing social conditions. The *evolutionary* function can, it is also argued, suggest that general trends should be accepted as widespread in the researcher's own system and treated as such in terms of education policy. In many cases, this fails to take account of whether the general trend observed is, in fact, at all relevant to the country in question in the way that is assumed. Criticisms of the *experimental* function, finally, include the fact that it is difficult to transfer scientific methods to social science investigations, that frequency is often too low to permit general conclusions, and that studies do not always include sufficiently diverse countries (for example, industrialised and developing countries) in the research setting and/or that the findings cannot be applied to countries with different situations without further nuancing.

We shall now move on to selection of the research field. Directly connected to the research intention is the choice of methodology, to which we now turn.

Research Fields and Research Methods

The selection of countries is crucial to the comparison and is closely linked with the research question and other, more pragmatic, considerations relevant to access (see above).

In relation to the first aspect, Georg (2005, p. 188) makes some trenchant comments:

Selection of the methodological approach is closely linked to the specific framing of the research question and to the function the comparison is intended to serve. If the aim is to draw conclusions about legitimate relationships between two variables outside a specific country context, then the cases (here, countries) chosen should demonstrate as many differences as possible (this is sometimes referred to as 'most different systems' design). If, however, such a design still throws up significant similarities in the relationship between dependent and independent variables, then this indicates that national differences are irrelevant and that the findings are universally applicable (examples include the growth in training or trends towards globalisation). This research design is turned on its head in cases where the focus is on investigating the influence of particular factors on variable phenomena. In such cases, countries are chosen to have as many commonalities as possible and then, as in a scientific experiment, treated as constants (the *ceteris paribus* principle). One particular form of this 'most similar sys-

tems' design is matching, which offers maximal similarity of context and hence enables the relationship between independent and dependent variables to be analysed systematically.

The choice of countries is also relevant to the second aspect – access – since it is not always feasible to carry out the comprehensive and fundamentally relevant induction to the area stipulated by Bereday (1961, p. 146 et seq.):

Knowing the language of the area to be studied is an essential requirement for comparative work, yet this principle is often overlooked. It is inconceivable to rely on translations to read the literature produced by a country in which one wishes to specialise. [...] A lengthy period of residence in the country in which one specialises is just as important. For a really perceptive approach, there is no better method than simply living with the locals: close contact with a culture in a wide variety of everyday situations gives a researcher a feel for the lives the people lead that can never be acquired simply by reading. This understanding is not only important *per se* but is also the key to making the right selection of research methods when the researcher plans a study of the education system. Normally, residence of at least a year should form part of the training for all those engaged in comparative education work.

This last aspect in particular takes us on to the next issue: should the researcher study every aspect of a country's education and training system or just one section of it?

The macro-comparison approach known as 'total analysis' has commonly been used as a means of gathering knowledge and experience on a predominantly descriptive basis (Lauterbach, 2003a, pp. 187–92). The 'problem approach', by comparison, focuses on specific aspects of the research question and generally adopts empirical methods as well as hermeneutic processes (Epstein, 1992, p. 20 et seq.; Lauterbach, 2003a, p. 165 et seq.). This latter approach has recently become much more popular. A judgement as to whether studying the entire vocational training system of a country is actually a 'total analysis' or whether it can only ever represent a 'problem approach', given its integration into and interdependence on other parts of the education system, depends ultimately on the methods to be used and the normative research position adopted. The issue of whether comparative employment and business education can, as a result, actually generate a 'total analysis' may prove a secondary issue against the backdrop of a more pragmatic interest in findings (see above).

The methodology is of particular importance when designing comparative research. A four-stage process has been established here on the basis of work by Hilker (1992) and Bereday (1961), *inter alia* (see also Frommberger and Reinisch, 1999, pp. 329–31; Hörner, 1996, p. 14; Lauterbach, 2003a, p. 189 et seq.), and closely re-

flects the development and application of a criterion for comparison illustrated in Fig. 1.

The initial stage is the 'descriptive stage', which involves observation and description but not theoretical justification. The 'explanatory stage' then introduces interpretation, with the aim of explaining and understanding. The subsequent 'juxtaposition stage' then constitutes the first real attempt at comparison, offering the national findings set in the context of the comparison criteria selected for evaluation and side-by-side analysis. This enables, for example, homologous, analogous and diverse phenomena to be derived, along with possible comparative hypotheses. At the final 'comparative stage', these comparative hypotheses can then be tested using systematic comparison, relationships between countries can be assessed by reference to the criterion for comparison, and conclusions can be drawn for the subject being researched.

In comparative education and training research, typologies are commonly used both for classifying comparative processes and for presenting their findings (Deißinger, 1995, p. 377 et seq.). Typologies are more or less ideal types of construct in which the ideal types diverge from the actual types identified empirically (Deißinger, 1995, pp. 369–77). These more or less substantial divergences have to be typified or construed as extreme types spanning a continuum, and it is into this continuum that the real types are placed (Pilz, 1999, pp. 88–99, *inter alia*).

Traditionally, European research into country hierarchies according to different types of training has produced a classification shaped particularly by the influence the state exerts on vocational training (Green, 1995 and Greinert, 1988; see also Niemeyer, 2007 and Nilson, 2007). This classification is outlined below.

The approach distinguishes between the 'school model', the 'market model' and the 'state-regulated market model'. In the 'school model', the state takes responsibility for initial vocational training, which is provided by the state education system. Greinert, *inter alia*, cites France as an actual example of this ideal type; in France, large sections of initial vocational training take place in vocational schools in full-time study mode.

In the 'market model', by contrast, vocational training is largely organised without state influence: companies provide training services wholly on their own initiative. It is clear that this model centres on the practical way which skills are passed on – that is, on a marked orientation of skills development to the specific requirements of individual companies – with particular importance attached to strict efficiency criteria. The most commonly cited practical example of this ideal type in the research literature is that of the United Kingdom, where the aims specified by the state for vocational training exist in what might be called 'niches' (see, for example

Green, 1995; Pilz 2009b; Ryan, 2003;) but where companies carry out the training, often informally and without any form of certification.

The third model is the 'state-regulated market model', in which the state manages companies' involvement in training. In this model, the state defines a statutory framework, including for example guarantees of the breadth and complexity of training irrespective of the specific requirements of the individual training company. However, the powers to provide the training are devolved to companies, including the freedom to decide whether to take on apprentices and if so, how many and under what entry requirements. This model involves the separation of general education from vocational education. The classic example of this ideal type is Germany, whose 'dual' training system offers a balance between the needs and interests of companies on the one hand and the state on the other (see for example Greinert 2007; Pilz 2009b).

Though popular, this typology has been open to criticism from the discipline, and it is appropriate to give at least an overview of that criticism here. Deißinger (1995, p. 374), for example, notes that

The question arises as to whether this typology is fruitful as we have defined it, that is, whether it allows us to identify the way in which institutionalised vocational training operates and is structured and the context in which it functions and, hence, the constituent features and core parameters of a 'vocational training system', we must also question whether it meets the quality criteria for typological constructs – that is, whether it generates ideal types as defined by Weber.

In structural terms, Deißinger (1995, pp. 374–77) criticises the use of a single criterion as being too narrow to typify an entire VET system, while in content terms, there is criticism of the fact that key parts of VET that do not easily fit into the classification are simply excluded (for example, college training in the UK). Deißinger is also critical of the logic, pointing to difficulties with the nomenclature; this schema, he argues, refers sometimes to functions (the 'market model'), on other occasions to providers and functions (the 'state-regulated market model'), and on yet other occasions to locations (the 'school model'), thus failing to define an unambiguous and rigorous criterion.

Based on this criticism, Deißinger (1995, pp. 377–83) develops his own typology, using a multidimensional concept of 'skills development styles'. We do not have the space to explore this model here but note in passing that it too has been subject to criticism (Frommberger and Reinisch, 1999, p. 340; Münch, 1997, p. 179, *inter alia*), reflecting the fundamental difficulty of typologies.

For example, both Georg (2005, p. 189) and Frommberger and Reinisch (1999, pp. 340–43) have noted that classifications of vocational training systems frequently

fail to acknowledge the complexity of such systems and the extent to which they are an integral part of a country's general education system, employment environment, and social system.

Deißinger (2005, p. 372 et seq.) also argues that

The literature on classifications of 'vocational training systems' seems to me to need amending. The literature shows design defects: either contributions focus on a single structural feature as the criterion for comparison, ignoring other features of such systems that reflect the complexity of training activity and the context in which it takes place, or they exclude the criteria that are relevant to a contemporary approach to comparison focusing also on the employment education implications of current issues in both practice and policy. There are also references to classifications that create an impression of arbitrariness because they are clearly not based on design principles informed by criteria but rather use clusters of characteristics to produce descriptively compressed abstractions, producing 'system variants' rather than rigorously constructed ideal types. Moreover, it produces classifications whose authors content themselves with constructing categories for the diversity of forms of vocational training by establishing discretely constructed typologies – each oriented around one particular criterion – justifying this by reference to actually existing 'vocational training systems'.

Finally, Lauterbach (2003b, p. 527) is sobering in his fundamental challenge to the relevance of adopting typologies: 'In comparative business education, the period between the 1970's and 1990's was dominated by idiographically oriented studies of foreign VET systems based not on solid comparative analysis but on the construction of artefacts to systematise such systems in line with typology theories.'

Ultimately, we need to establish who has advocated which comparative models within comparative VET research, and the answer lies in delineating the comparative functions outlined above. It must, however, be stressed that limitations of space also prevent us here from exploring the full breadth of the many studies undertaken. We can perhaps sum up by saying that today's researchers are much more willing to venture off the beaten track of country reports, descriptive accounts, and sometimes arbitrary comparisons between countries with the aim of identifying the 'best' system (or the best parts of a system). Country reports underpinned by experience, such as the IFKA reports (Hellwig et al., 2001), have given way to other descriptive or idiographic approaches. Of relevance here are the standard work, the *Internationales Handbuch der Berufsbildung* (*International Handbook of Vocational Education and Training*), with its comprehensive country analyses (Lauterbach et al., various editions) and the *Handbook of Technical and Vocational Education and Training Research* (Rauner and Maclean, 2009) along with country profiles, such as those published by the European Centre for the Development of Vocational

Training (CEDEFOP) or Germany's Federal Institute for Vocational Education and Training, BIBB (including, for example, the iMOVE project).

Melioristic and *evolutionary* approaches geared to the 'problem approach' are also usually adopted by national and international bodies, including CEDEFOP, BIBB, OECD, UNESCO-UNEVOC, and European Training Foundation (ETF). They have also been adopted by the German Leibniz Institute for Educational Research and Educational Information (DIPF) and publicised in relevant studies (details can be found via the homepages of these institutions). Moreover universities have developed approaches for comparative employment and business education. The next section will use some examples from the wealth of findings to serve as rudimentary examples.

Quasi-experimental approaches, finally, are rarely encountered in comparative research into vocational training. As well as approaches to establishing a 'Programme for International Student Assessment' (PISA) for vocational training (Beathge et al., 2006), there are some smaller studies (for example Fulst-Blei, 2003).

Against the backdrop of the theoretical and methodological approaches outlined here, the next section will present a model for comparing the characteristics of diverse training systems on the basis of theoretical factors and an approach supported by indicators. However, the selection of the scope of the indicators is not intended in any way to diminish the importance of other methodological approaches; space constraints limit us to an overview of just one approach.

Approaches to Modelling an Indicator-supported Simple Model for Comparing Training Activities

International comparisons of education and training systems are made in diverse and, in some cases, fundamentally contrasting ways, some of which have been outlined above. For example, one well-known approach is to determine general or educational indicators that can be derived on the basis of standard procedures and subsequently compared (Ryan, 2003; Wittmann, 2010). We shall partially follow this approach here, using the definition offered by Grollmann and Hanf (2010, p. 21): 'Indicators reflect empirically determinable facts that can be used to draw conclusions concerning the quality and further development of systems. This requires a view of what the quality of a system actually tells us and what facts will enable us to depict this quality.'

Indicators in a Comparative Context

Probably the best-known example of the use of indicators in the educational area is the OECD's *Education at a Glance*, which compiles, prepares, and publishes indicators for a variety of countries (Krüger-Hemmer and Schmidt, 2010; Westholm, 1994). The data are then used by both the OECD itself to tackle broader research questions (see for example, OECD, 2000) and other research bodies (for example, Hörner, 2002).⁷ In the vast majority of the studies, comparison of individual aspects of diverse national educational systems is foregrounded. This comparison then serves as the basis for improvements in the more poorly performing parts of the education and training system (Nuttal, 1994, pp. 19–23). As Bottani and Walberg (1994, p. 13) note,

These findings can influence the way in which politicians, educationalists and the public as a whole think about the education system. They can also be valuable in pointing to promising possible improvements to the system. Indicators can serve as a tool in the ongoing dialogue about nations' expectations of their education systems and about how these expectations can best be met. In so doing, they will be able to make a vital contribution to education and training policy and training planning.

Indicators are frequently also sub-divided into 'input indicators', 'process indicators' and 'output indicators'; further special indicators are also sometimes identified (Bottani and Walberg, 1994, p. 13; Herpen, 1994, pp. 37–43; Nuttal 1994, p. 24 et seq.). For example, average expenditure per student may be identified as an 'input indicator', while effective learning time in hours may serve as a 'process indicator', and 'output indicators' may include examination pass rates (Herpen, 1994, p. 51).

It is impossible to determine in general terms which indicators appear to be appropriate and which do not. The multidimensional nature of an education system precludes 'theories about the education system *per se*' (ibid., 1994, p. 30), so the significance of indicators can be assessed only against the backdrop of a particular theory, such as human capital theory or theories of effective schools (ibid.).

If we then apply these comments to assessing VET, we need to bear some peculiarities in mind. The topics we are considering constitute a sub-system of the education system more broadly, so only those indicators that are of relevance to the VET context can be used (ibid., p. 29). As with the education system generally, the use of indicators for comparing VET systems frequently raises issues of quality and efficiency (Lipsmeier, 2001, p. 36).

Moreover – and this is a key point here – the theoretical basis for development of the indicators needs to be specified, so that the reasons for selection are transparent.

⁷ For a critique of this approach, see for example Macbeath, 1993.

In the context of comparative research, the *evolutionary/nomothetic* and *experimental* functions are most common (see above). Since they frequently involve aspects that are criticised or seen as deficient in terms of quality and efficiency, we can also note that in many cases, the research also takes a 'problem approach'.

However, this broad-brush outlining of indicators is far too general to allow a clear goal to be identified. For example, the European Centre for the Development of Vocational Training (CEDEFOP) stresses that 'It is difficult to assess the effectiveness of VET policy measures... not only because of the limitations of the methods currently used but also because there is often no clear identification of the aims of the vocational training' (CEDEFOP, 2000, p. 138, cited in Lipsmeier, 2001, p. 37). Consequently, Lipsmeier (2001, pp. 44–48) *inter alia* formulates a list of as many as 20 criteria for measuring the efficiency of vocational training systems.

Modelling and Justification

Based on the standard issues in vocational training (Epstein, 2008), we shall assume here that different interest groups make different demands of initial vocational training and also have convergent conceptions of it. This avoids the risk of insufficient target-orientation in evaluating VET activities, since in generating and assessing data about individual variables, it is always possible to refer back to the interest groups or areas in question by strict reference to target relevance. What is important here is, therefore, not a discussion of the advantages and disadvantages of specific individual indicators but development of a model that can serve to legitimate the subsequent use of specific indicators.

In order to make this fundamental discussion more concrete, we shall devise a model to illustrate the differing stakeholder groups and their specific demands of the VET system.⁸ It should be borne in mind, however, that – as indicated above – specific stakeholder interests can clearly be attributed to a number of different groups. These interests are, therefore, placed in their own non-group, specific but corresponding class, to be referred to as a 'stakeholder area'.

The aspects directly reflected in any individual stakeholder group, which can be used to form indicators, are also interdependent at different levels on other stakeholder groups. Ultimately, pragmatic reasons dictate that they will be allocated to the stakeholder group that most strongly represents the aspect concerned, even

⁸ Here, the specific construction of model diverges from other approaches in that there is no sub-division into, for example, 'input' factors and 'output' factors or qualitative and quantitative factors. However, nor does the model fundamentally dismiss such a sub-division; it merely defers it to a later stage in implementation of the methodology.

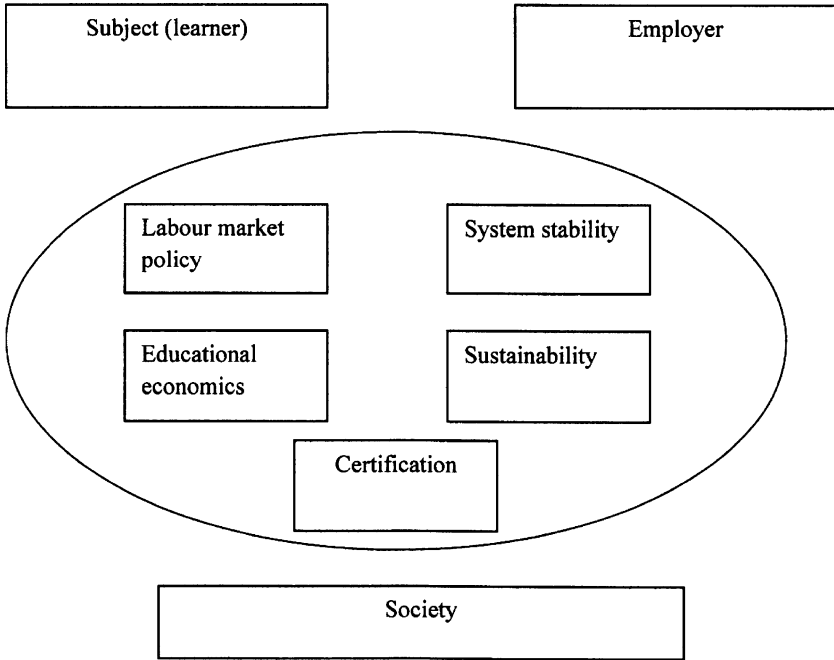


Figure 2 Model for stakeholder groups and stakeholder areas in basic vocational training (Source: own illustration)

where this runs counter to a dogmatic interpretation of the possibility of cross-over in forming classes in the context of the research methodology, since this is the only way in which systematisation is possible. Moreover, the groups are ideal types, since in practice, it is frequently possible to determine individual divergent partial interests even within a group defined as having common aims. It should also be borne in mind that the vast huge range of differing interest groups makes it impossible to achieve a standard level of abstraction when it comes to defining indicators. Some of the indicators can be of global, but some are highly concrete. This, however, plays no part in the core assessment provided that identical indicators are used for example for comparisons with other types of initial vocational training.

On the basis of these initial considerations, we can identify three central stakeholder groups (see Fig. 2).

The first of these is young people in initial vocational training; the second is employers in the guise of training companies; and the third is society as a whole,

which – in the guise of the state – can, for example, take over responsibility for the operation of vocational schools and thereby also be identified as a group with stakeholder interests.

The stakeholder areas specific to these groups are then: labour market policy; educational economics; system stability; sustainability; and certification.

The next stage is to allocate stakeholder interests – expressed as aims – to individual stakeholder groups, which then generates selection criteria for concrete indicators. The identification of goals is based on interests frequently allocated to individual groups and areas in the literature and the media. Against a backdrop of differing analytical aims, the goals identified should also correspond as far as possible with existing indicator systems. This should act as a control function in ensuring that the indicator set developed is as comprehensive as possible.

The Subject (The Learner)

Young people undergo training in the expectation that they will be given comprehensive training in a specific area of employment or *Berufsbild*, a German term encompassing a broad concept of how the individual fits into the occupational world (see for example Greinert, 2007; Pilz, 2009b; Ryan, 2003). They expect both training companies and vocational schools to offer a high quality, modern system of teaching and learning that will facilitate acquisition of appropriate skills.

They expect a good income and good prospects for their future career on completion of their training, but also that the training will gain them recognition in – and allow them to move through – the general education system.

Employer

From the perspective of companies, the main benefit of training is ensuring that they have a workforce whose skills are optimally suited to their operational needs. This means that training has to be tailored as specifically as possible to the particular current and future skills requirements of each individual company.

Society

Society at large expects that the VET system will make a crucial contribution to developing young people's identity. As 'enlightened and mature economic citizens' (Achtenhagen et al., 1992, p. 5), learners should be given comprehensive training, including in social competences, such as empathy and critical skills, and personal attributes, such as reflectiveness. Training is also expected to develop general social values and standards and to encourage young people to take an active part in public life.

It is of course important to point out here that from an international perspective, these normative demands may vary with the culture in which training happens. However, various studies have shown that vocational training tends towards broadly similar patterns as far as these norms are concerned (see, for example, OECD, 2000 and 2010).

There is marked international controversy about other aspects, such as whether the VET system should open up opportunities, such as access for all young people, a chance to take part, and equal opportunities at gender, social, and geographic level. At the same time, the existing potential of learners should be encouraged and developed to the full.

Even this rudimentary analysis of interests by stakeholder group shows clearly that both complementary and conflicting stakeholder interests can be identified. For example, the interest that society has in developing young people's identity fits perfectly with the interests of learners, who seek both vocational training in the narrowest sense and a broadening of their training horizons more generally. Conversely, there is disagreement within training companies about the issue of personality development: here, too, general development is stressed, but for all practical purposes, the company will privilege its own specific operational needs when it designs training.

The following stakeholder areas show particularly clearly the links with more than one of the three stakeholder groups.

Labour Market Policy

Throughout the world, labour markets set store by keeping youth unemployment as low as possible. In relation to the training system, this aspiration can, for example, be linked with a concrete interest in having training places available for as many applicants as possible or avoiding delay in the transition from training to employment. From a labour market perspective, it is possible to distinguish between a horizontal and a vertical level (Mertens, 1976). The horizontal level relates to the interest in the way the training system is adapted to developments in employment and, in any given sector, in training the exact number of apprentices needed to meet that sector's staffing needs. The vertical level relates to how the training system matches employment in terms of skills. The concern is that in training, young people are skilled to meet the needs of the employment system.

Educational Economics

The concepts of 'effectiveness' and 'efficiency' are of particular significance in educational economics. Here, we restrict ourselves to considering efficiency as defined as the relationship between input and output. This stakeholder interest may, thus, take

the form of achieving of a precise training policy goal, such as reducing failure rates in the final examination by a specified percentage, using resources sparingly (usually expressed, at least indirectly, in monetary sums), or identifying the resources that prove most effective. The ultimate aim is to secure the maximal gain against a backdrop of limited resources, which may also include time aspects, such as measuring whether a goal can be achieved within a specified timeframe.

System Stability

If a training system is to prove resilient in the long term, it has to be adaptable (Pilz, 2002); only those training systems that are flexible and fundamentally modern can meet this criterion, taking into account adaptation in such diverse areas as modes of learning and teaching, educational structures, and curricula.

Factors inherent in the system also play a major part in stabilising the system, with particular emphasis on the quality of the teaching staff, defined both as teaching quality and quality of school management and development. However, interests here may also take the form of an attractive environment that boosts learning, for example appropriate accommodation or technical equipment.

In this context, the question of the status generally enjoyed by the 'dual' training system is also significant. If it is viewed as inferior or as being of poorer quality than other forms of training, this may constitute a substantial threat to its survival (Pilz, 2003).

Sustainability

Against the backdrop of increasingly rapid change in the world of work, the key issues under the heading of sustainability are particularly important. It should be noted that this refers not to the sustainability of the VET system itself – which is here considered under the heading of system stability – but to its ability to subsume opportunities for lifelong learning and sustainable educational outcomes under initial training.

Scope for lifelong learning can also be linked to the interest in ensuring appropriate structures for further training that ensure smooth transitions and establish initial training as the basis for subsequent learning. There is also interest in further training as a means both of adapting existing knowledge and expertise and of securing additional qualifications.

Vocational learning may also reflect an interest in the ability to manage change; change *per se* should be seen not as a threat but as a challenge and an opportunity. In this context, VET systems may also be expected in particular to help learners develop their ability to show high levels of innovativeness, often described in rather clichéd terms as 'promoting inventors and visionaries'.

Certification

In terms of certification, key issues focus around how to measure and assess performance in such a way that it can be certified. It is vital to establish the extent to which the competences acquired during vocational training can be assessed as precisely and meaningfully but also as fairly as possible. A related area of concern is the question of the cost of assessment.

Finally in this context, issues of transparency and recognition of certified learning are crucial, especially when some countries, such as Switzerland, assess trainees at the end of training while others, such as Japan, assess them instead on entry.

This set of tools for defining indicators provides us with an instrument for classifying and assessing vocational training. As suggested above, it is important to recall once more that this procedure is merely one method among many that could be used in comparative research into vocational training.

Case Study: The Attractiveness of Vocational Training

What follows is one possible example of how the assumptions in our theoretical model could be applied to a specific, concrete research question. The case study used is highly relevant as a *tertium comparationis* (see above) – how attractive vocational training is or may be. The contributions to this book, originating as they do in a wide range of countries and cultures, provide impressive evidence that this issue is absolutely vital to the future of vocational training in an international context.

We have chosen a European reference level and simplified and/or adapted the model assumptions to the selected issue. It is, of course, possible here to offer only a brief overview restricted to the application of aspects of the model at a medium level of abstraction. It is, therefore, impossible here to give detailed accounts, in particular of the formulation and application of empirically validated indicators.⁹

Attractiveness from a Business Perspective

In any country, the pool of skilled labour constitutes a major factor in companies' decisions on investment and location. As a result, the form vocational training takes is a key element in the choice between industrial and exporting nations when deciding where to locate.

⁹ Readers with a particular interest in this area are referred to Berger and Pilz's (2009) highly differentiated study of the benefits of vocational training in the German context.

In some countries, like Austria, Denmark, and Germany, vocational training takes the form of what is called a 'dual' system that combines workplace learning with formal study. Based on a training contract between a young adult and a company, it alternates periods in the classroom and in the company (CEDEFOP, 2002, p. 19). One third of Danish and German companies are currently involved in training young people (CEDEFOP, 2002; European Parliament and Council, 2009), underlining the quality of vocational training from a business perspective. Because of space constraints, we cannot, however, go into detail here about the full range of reasons motivating companies to be involved in providing training.

A recent survey shows that German companies decide to become involved in training solely to meet their own future needs for specialist skilled labour (Ebbinghaus and Ulmer, 2009; Pilz, 2009b). Workers trained and skilled in-house are considered more flexible and appropriate for companies than those recruited from outside the company. Investment in training is therefore cost-effective only if the apprentice is subsequently taken on by the company training him or her. An additional benefit many companies enjoy from training is a positive public image and a good basis for contacts with potential new customers (Ebbinghaus and Ulmer, 2009).

The structure of in-company training is largely dependent on country-specific conditions. In this context, the United Kingdom is a particularly interesting example: here, a more flexible labour market has resulted in the introduction of a modular qualification system (Pilz, 2009a). As curricula and the qualifications framework have become more transparent, companies are increasingly able to accredit (partial) skills.

Attractiveness from a Social Perspective

In many European countries, vocational training helps to integrate young people into the labour market and, hence, into the life of society. Gangl (2003, p. 72) uses empirical comparative analyses of twelve European countries to show that a higher level of education and vocational specialisation helps to avoid unemployment and low-skilled jobs. His study also finds that the risk of unemployment is minimised through the combination of vocational qualifications and real-life work experience offered by the 'dual' vocational training system. This means that the 'dual' system is highly rated within the Common Quality Assurance Framework (CQAF) and that the youth unemployment rate is regarded as an indicator for supporting the quality objectives of VET policy (European Parliament and Council, 2009).

Along with the 'dual' vocational training system, full-time VET systems also offer relatively good opportunities for entry into the labour market (*ibid.*, 2009). In

France, for example, only 11% of young people who have successfully completed VET are unemployed (Ministère de l'éducation nationale, 2009), less than half the unemployment rate for all young people in France, which currently stands at around 24% (Eurostat, 2009). France's full-time VET system also offers participants a major opportunity to make up for failure to gain educational achievements at school. At present, about one student in four opt to go on to use vocational training as an entry qualification for post-compulsory education at a *lycée professionnel* (Ministère de l'éducation nationale, 2009). It is also the case that focusing vocational training wholly on the academic sector greatly reduces vulnerability to fluctuations in the labour market compared with a 'dual' training system.

Denmark and Germany ensure that employers' and employees' organisations play an active part in structuring VET, and their involvement ensures that the curricula for vocational training programmes match the requirements of the labour market. This in turn ensures that the labour market will recognise the qualifications gained. Better adaptation of VET to labour market demands is not only a strategic objective of VET policy but also a (measurable) indicator for quality assurance (European Parliament and Council, 2009). Particular emphasis should be placed here on Denmark's cooperation between employers and employees: regional business representatives on vocational school boards have a decisive influence on vocational schools (*erhvervsskoler*), for example (Grollmann et al., 2003, p. 3).

Training programmes recently implemented in France also aim to support a combined approach: over the past year, training offered in junior high school/general intermediate schools has been supported by periods of practical training (*découvertes professionnelles*) (CEDEFOP, 2008a). And against the backdrop of the challenges of globalisation, the education system has attached strategic importance to close cooperation between schools and businesses (European Commission, 2002, p. 12). The United Kingdom has also supported new and practically-oriented learning provision for students in compulsory education (Spielhofer and Walker, 2008).

As the labour market has become increasingly Europeanised, a further challenge is to make general and vocational education systems more comparable so that the knowledge, skills and competencies acquired by individuals in different systems and different countries can be compared reliably and meaningfully. The instrument used for this purpose is the European Qualifications Framework, or EQF (European Parliament and Council, 2008). Employees with EQF qualifications enjoy greater mobility on the European education and labour markets. They are also able to move between different parts of their national education system (general education, vocational education and university education), which in an international context is often referred to as enhancing equivalence.

Attractiveness from an Individual Perspective

The notion of transparent competences and educational qualifications, underpinned by law recognised across Europe, offers learners new opportunities on the European labour market as well as further opportunities in the education system (Severing, 2006, p. 22). The increasing importance of further education and training, or lifelong learning, is the result of technological advances, structural economic change, and demographic shifts (European Parliament and Council, 2008). The new and innovative technologies, products, and manufacturing processes that are now common across business considerably reduce the half-life of knowledge, requiring knowledge and occupational skills to be continuously updated. In this context, the French VET system acknowledges each employee's right to (vocational) training (*droit individuel à la formation*), which, among other things, entitles every employee in France to 20 hours' education and training each year. The choice of specific content is subject to agreement between employee and employer (CEDEFOP, 2008a).

Participants in vocational education within the 'dual' system also benefit from training posts in industry. Oberthet al. (2006) note in connection with the German 'dual' system that learning in a company environment with practical relevance means that the training is concrete but also that learners acquire their knowledge and skills through hands-on experience. In other words, technical progress is directly available to the learner (Oberthet al., 2006, p. 7), but he or she also gains personal and social competences available only from involvement in the professional sphere. It is assumed that this linkage of theoretical knowledge acquired in vocational schools and companies with in-company experience has a strong motivational effect on less academic students. Their experience of the relevance of apparently 'abstract' knowledge not only helps them to successfully complete tasks or deal with problematic situations but also helps to improve and stabilise their self-esteem (ibid., p. 16).

The British system of 'accreditation of prior learning' or APL (QAA, 2004) should also be mentioned in this context; this system enables competencies and skills acquired outside a formal context to be accredited and certified *post hoc*.

Recognition of education and training within the further education system and in the labour market are also of importance, and the European Quality Assurance Reference Framework for VET provides for this (European Parliament and Council, 2009).

Compared to the British APL system or France's VAE (*validation des acquis de l'expérience*) framework, Italy only has a small-scale system for accrediting both formal and non-formal achievements, and over the past few years, this has given rise

to debate about how to validate learning in the context of the most recent reforms of education, vocational training and labour. One example is the validation within the national civil service of competences acquired through social service. These competencies can be recognised as credits towards vocational training pathways or as valuable access requirements to regulated professions (CEDEFOP, 2008b).

Summary of Findings

In summary, Fig. 3 below provides a visualization of the different attractiveness aspects referred to above, illustrating mutual interdependence of almost all factors.

For example, the ‘transparency’ criterion is important both to an employer seeking to fill a job but also to the individual holding a qualification. Another aspect is the integration of less academic students into employment, something that is not only of social but also of individual relevance; as age cohorts shrink, companies are concerned with the question of supporting less able students. A well adapted VET system is important not only for the success of the labour market, but also for individuals’ ability to make a living. Finally, the adaption of different VET systems to the demands of different labour markets must also include what is on offer in further education and training.

Perspectives

The contributions to this volume clearly illustrate that, unlike other elements in the education system, vocational training is difficult to account for and analyse in an international context. The reason is clearly the very diverse and, in some cases, differently regulated approaches across countries to vocational training. Individual VET courses and programmes often differ hugely in terms of structures, processes and aims, even within a single country; inter-country comparisons naturally increase diversity, making it difficult to draw conclusions and achieve transparency.

It is, therefore, significantly more difficult to engage in international comparative research into vocational training. Yet if this disadvantage is used positively, we can derive perspectives that point to fruitful comparative research in future.

The necessary basis for this is a sound theoretical and methodological approach that, as far as possible, neutralises the problem of diversity and divergence in VET processes. Careful selection of a research question linked to identification of an appropriate subject for study is essential here. Then the *tertium comparationis* can be

Bold denotes 'high importance'
Non-bold denotes 'important'

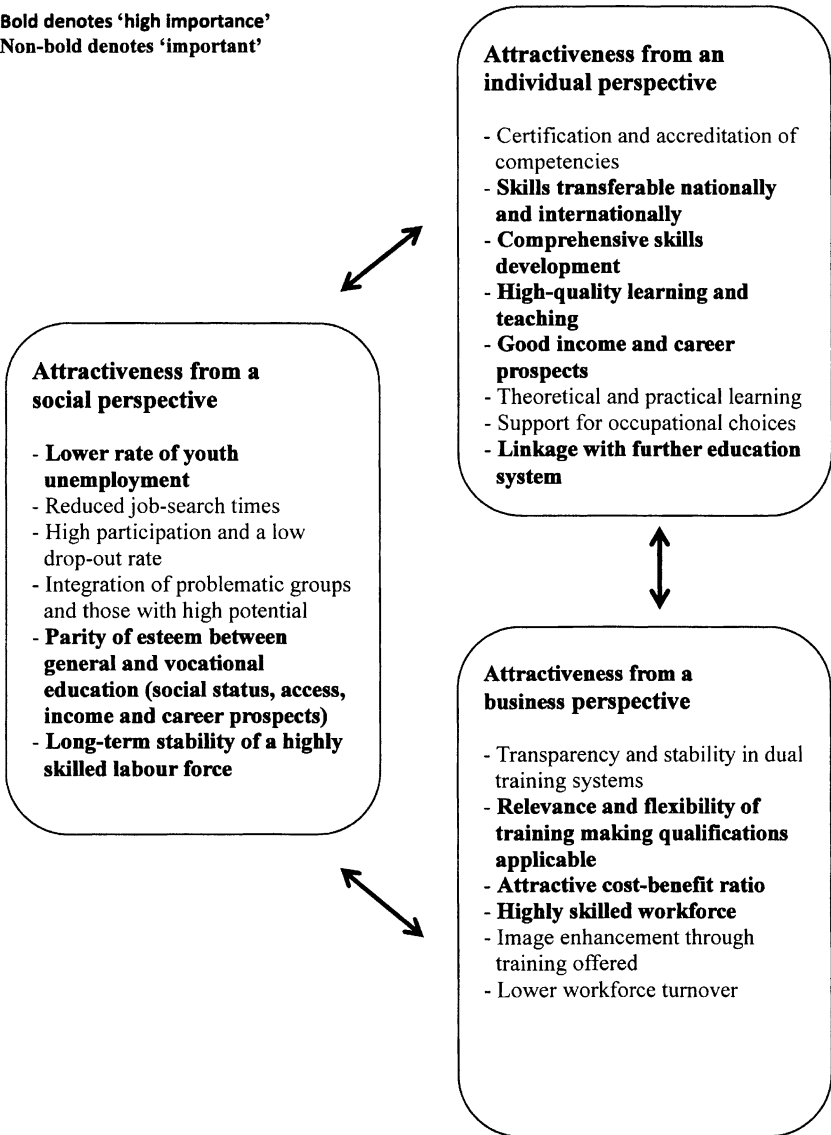


Figure 3 Elements of attractiveness to different target groups (Source: own illustration)

identified and applied, using suitable methods of analysis (see Fig. 1). The challenge to comparative VET research is, therefore, to focus specifically on this area and to establish directions for future research.

Every research question is, of course, underpinned by a research intention, frequently the intention to 'learn from the mistakes of others' and not to repeat those mistakes (see, in particular, the section on the melioristic function above). However, such an intention can be successful in practice only if the specific characteristics of a target country are respected and the researcher does all he or she can to avoid an ethnocentric view (see above). It goes without saying that it is very difficult to achieve this when considering complex education and training systems, which in some countries are currently evolving at a breathtaking pace.

There are, however, activities that could support the aim of 'understanding' vocational training processes in other countries, including not only publications, international networks and longer research trips, but also particularly international conferences that provide a forum for detailed academic discussion of a range of views and perceptions. And it is precisely these activities that are likely to prove particularly significant in strengthening and improving vocational training in an increasingly interconnected world.

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