

Technical and Vocational Education and Training:
Issues, Concerns and Prospects 24

Matthias Pilz *Editor*

Vocational Education and Training in Times of Economic Crisis

Lessons from Around the World

 Springer

Technical and Vocational Education and Training: Issues, Concerns and Prospects

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Matthias Pilz

Editor

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This book is dedicated to Professor David Raffe, former professor of sociology of education and member of the Centre for Educational Sociology at the University of Edinburgh (Scotland). He had been hoping to give a keynote speech at the G.R.E.A.T. conference in Cologne in 2014 but was prevented from attending by ill health. He died unexpectedly in February 2015, shortly after he retired.

David was a researcher with an international reputation but also a fantastic writer and impressive lecturer. Many committees, international organisations and boards benefitted from his advice.

I first met David in the early 1990s, when I was a young student. His deep knowledge, rigorous thinking and incisive writing left a lasting impression on me. He offered me some advice on my own work and, later, invaluable guidance on my Ph.D. thesis about developments in modular VET in Scotland and Germany. Many other researchers, too, have been influenced by David's contributions, and he will be remembered for his generosity and his legacy.

Matthias Pilz

Foreword: Technical and Vocational Education and Training (TVET) and Skills at the Centre Stage

Introduction

Our time is an era of transitions. This is also a time of turbulence as well as a time of challenges. The challenges which threaten the economy, society and the environment are numerous, complex and interconnected. In spite of significant economic and social progress till date, high youth unemployment, social disparities and environmental degradations create challenges for all countries. These challenges threaten human security, dignity, social cohesion and peace.

Youth unemployment is a major source of concern all over the world. For instance, according to the International Labour Organisation (ILO) (2015), 73.3 million youth (i.e. one in eight young people in between 15 and 24 years old) were unemployed in 2014. As per recent estimates, at least 475 million new jobs need to be created over the next decade to absorb the 73 million currently unemployed youth and the 40 million new entrants in the labour market annually (ILO 2015).

A continuing surge in the global labour force and a disparately slower rise in employment opportunities have challenged youth employment. The UNESCO Institute for Statistics (UIS) (2013) estimated that 123 million young people worldwide in 2011 lacked basic literacy skills, weakening their opportunities to enter further education and training and subsequently the labour market. And according to *Youth not in employment, education or training* (NEET) – OECD Data (2014), nearly one in five young people in OECD countries is neither employed nor attending education nor training.

These trends are grim realities that need to be addressed. They not only portray a sorry state in which the young people in both developed and developing countries are in. These trends point us to look at more serious problems with the education and training systems that fail to equip these young people and adults alike, with the knowledge, skills and competencies they need to navigate through the labour market and through life.

There are two reasons that exacerbate this situation. First, young people are faced with high economic difficulties in countries that pursue a jobless growth. A

jobless growth is where economies have insufficient abilities to provide jobs and is aggravated by other variables. Youth are said to be three times more likely to be unemployed than adults. This is because, for instance, that young people have to compete with those who are already in the labour market, mostly adults, since a while ago. In such situation, knowledge, skills and competencies are critically assessed, especially in economies that face structural changes in employment. With jobless growth, there are definitely not enough jobs for all. And those who possess the right mix of skills are the ones who get absorbed easily in the market. The global financial and economic crisis has led to accelerate this trend, resulting in significant impacts.

The second reason is closely linked to the first one. According to CEDEFOP (2014), endemic skills mismatches in Europe cause high unemployment rates. Forty per cent of European firms reported difficulties in hiring adequately skilled staff. A surge of graduate unemployment and skills shortages are also common in many emerging economies including India, Singapore and China. The skills-related bottlenecks are also highlighted especially in economies that currently go through low-carbon transition plans.

Challenges of Skills Barriers

One can argue that high youth unemployment is resulted from our economic, social and related TVET policies. Such policies have led to the aggravation of skills shortages, skills mismatches, unsatisfactory qualifications and inadequate skills. Skills shortages and mismatches in many countries are sometimes the result of the economic restructuring when these countries shift into advance skills. TVET systems lack the agility to depart from traditional methods to adapt training provisions to modern technologies that fully correspond to both context-specific and context-relevant to such technologies including the implementation of the low-carbon economy. A high percentage of youth unemployment is yielded from the inability of education and training systems to adopt provision of skills according to anticipated changes in the labour market simply because labour intelligence is weak or does not exist. The inadequate skills, which are below industry standards, are a result of the supply-driven mentality and lack of synergies with the industries and vice versa.

Therefore, skills development and TVET are in the top of countries' policy agendas and at the centre stage of the international policy discourse. In fact, TVET and skills development have never been as important and timely as it is now. We need to view this debate from a holistic, integrated and balanced way. Skills policy does not have merely economic dimension; it also has a social, technological and environmental dimensions contributing towards sustainability and lifelong learning. That's why UNESCO-UNEVOC advocates for skills accessibility and also highlights its transformation through sustainable and lifelong perspectives.

The educational, social, technological and economic imperatives have progressively raised TVET as a priority in all the regions of the globe. For instance,

the OECD (2013) describes skills as the new currency of the twenty-first century. The Association for the Development of Education in Africa (ADEA) (2012) called for investment in TVET as a solution to unemployment. So did the European Commission (2012) with its communication on 'Rethinking Education: Investing in skills for better socio-economic outcomes'. Other regional organisations have developed related regional strategies and qualifications framework, such as, in the Caribbean (CARICOM 2013), Asia (ASEAN 2009) and Southern Africa (SADC 2011).

Recognising the importance of TVET, UNESCO has developed a TVET strategy (2010–2015) to strengthen TVET in its Member States by focusing its actions on the strategy's three core areas: (i) provision of upstream policy advice and related capacity development, (ii) conceptual clarification of skills development and improvement of monitoring and (iii) acting as a clearinghouse and informing the global TVET debate. The promotion of the holistic development is at the core of the TVET strategy. The UNESCO-UNEVOC International Centre plays a vital role in putting the strategy into actions. These actions are built around the established functions of UNESCO-UNEVOC in which UNESCO-UNEVOC serves as a laboratory of ideas, standard setter, clearinghouse, capacity builder and platform for international cooperation.

There is a need to develop TVET policies that foster youth employment and entrepreneurship, sustainable development and lifelong learning. It will place a high priority on ensuring that its initiatives in this regard reflect an integrated focus on social equity and economic and environmental sustainability. TVET policies and programmes should be more responsive to learners' diverse needs – particularly those who are unemployed youth, excluded and vulnerable segments. It will support the development of innovative solutions to address youth unemployment and promote cross-sectoral approaches that transverse important policy areas including education, employment, industrial and economic development, agriculture, health and social policy, amongst others.

TVET and Sustainable Development Goals (SDGs)

The global goals require global solidarity, international dialogue and an inter-sectoral, interdisciplinary approach as expressed in the commitment made at the United Nations Sustainable Development Summit (2015), 'Transforming our World: The 2030 Agenda for Sustainable Development'. The 2030 Agenda has 17 SDGs, including SDG 4, which reads, 'To ensure inclusive and equitable quality education and promote lifelong learning opportunities for all'. Three targets are of special significance for TVET as follows:

- By 2030, ensure equal access for all women and men to affordable and quality technical, vocational, education and training and tertiary education, including university.

- By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.
- By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations.

Meeting these targets requires the transformation and expansion of TVET through articulations within education and between education and the world of work. TVET has a central role in helping youth and adults to develop the skills they need for employment, decent work and entrepreneurship, to support the effectiveness of their organisations and the development of their communities. TVET also contributes to promote inclusive and sustainable economic growth and social equity and environmental sustainability. TVET contributes to gender equality, global citizenship education (GCE) and education for sustainable development (ESD). It is of high relevance to transform TVET in a way to maximise its potential to contribute to the achievement of global goals.

One way forward to tackle these challenges lies in ensuring decent jobs for the young, particularly for those who are engaged in vulnerable jobs and underemployed. Another important avenue is fostering entrepreneurship, both as an instrument for job creation and an alternative path to labour-force participation, especially in the context of green and e-economy. However, the inadequacy of requisite skills and the social and financial capital in addition to aforementioned constraints make it imperative for UNESCO Member States to pursue inter-sectoral policies, reforms and innovative solutions.

Research Is High on TVET Agenda

It is now, more than ever, that research in TVET must be scaled up. Given the scope of work that TVET tries to cover, defining research priorities plays a crucial role to make TVET not only relevant but also appropriate for its broader purpose and make the reliable information available to a greater number of stakeholders in order to support in defining TVET's future.

There are two observed tendencies related to research undertakings in TVET. First is the tendency of existing TVET systems to confine research priorities to the immediate needs of the labour market that result in traditional supply-demand orientation of TVET. Second is the tendency of ignoring the broader socio-economic needs that TVET can more effectively address. This results in drawing a narrowed view of research priorities in TVET that further dilutes the potential of TVET to effectively assess social dimensions in the skill formation and forecast the needs of the society and the economy in the context of a holistic development, independent of what the labour market dictates.

The lack of research culture particularly in public TVET contributes to the negative impact of these tendencies in the overall design and implementation of TVET programmes and the restriction in asserting TVET's unique role in the context of a balanced social, economic, ecological and cultural development. Solid *evidence-based policy and practices are needed* in order to figure out what works and what does not work and where the line between foundation, specialised and transversal skill actually is. Such research should be collaborative, i.e. crossing national borders and looking for comparisons. They will be the keystone of sound evidence-based policies as well as of sound concepts for the field of TVET for the years to come.

The origin of this volume lies in the second international conference of the German Research Center for Comparative Vocational Education and Training (G.R.E.A.T.). The conference like G.R.E.A.T. is a valuable platform for researchers and professionals for sharing research findings and case studies. It has significant relevance in raising the bar of TVET research. I hope this volume will provide good resources in understanding holistic integrated and sustainable TVET with diverse settings and different contexts.

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Shyamal Majumdar

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Preface

The origins of this book lie in the second international conference of the German Research Center for Comparative Vocational Education and Training (G.R.E.A.T.) held in autumn 2014 at the University of Cologne.

The Significance of the Title

Over recent years, young people's transition from vocational education and training to employment has been extremely problematic in many countries. Since the start of the financial and economic crisis in 2008, many young people embarking on their working lives have found that there are few, if any, appropriate jobs available to them. This precarious situation is particularly vividly illustrated by the rising rates of youth unemployment across many countries, and many governments acknowledge that high youth unemployment is a major social problem. Vocational education and training is considered to have a particularly important part to play in solving this problem – EU initiatives in this area are just one example. However, it is important to avoid a fundamental misunderstanding. Good vocational training can have an impact only at the qualitative level, where needs-oriented skills development satisfies the requirements of the labour market and prevents a mismatch between the skills that young people acquire and the demands of the world of work. VET policy cannot have such impact at the quantitative level: If the employment system is unable to provide enough jobs during times of crisis, not even the best vocational training will change that.

As well as this central aspect, we should explore four further areas in which the crisis is having an impact.

First, in many countries, the economic crisis has also influenced state funding for vocational education and training. In some countries, the need to make spending cuts or to balance the budget has resulted in reduced expenditure on the vocational training system. It should be evident that, for example, cutting instructors' and trainers' salaries, deferring investment in premises and equipment or scrapping the

teaching materials budget will, in the long term, produce deficits in young people's vocational training. In other countries, by contrast, spending on vocational training has been increased despite tight budgets, with the aim of giving young people in a difficult situation some prospects for the future. Nevertheless, some observers are doubtful about how sustainable such ad hoc measures really are: they tend not to be coordinated, and there is usually no consultation with employers. In such cases, VET often ends up being a kind of holding pen for young people during difficult economic times rather than offering real prospects for future employment.

Second, however, the role of companies has also shifted in many countries as a result of the economic crisis. As demand has contracted and competition has become more intense, the pressure to manage costs has increased. Investment in skills development, including initial training for new entrants to the labour market, is long term, and the return in terms of cost savings and productivity cannot always be quantified, so different kinds of companies have withdrawn from initial training or reduced their involvement in it. While this drives down costs in the short term, it creates a long-term risk of a shortage of skilled workers.

Third, young people's reaction to the crisis should be a further focus. It is clear that, as a result of the crisis, young people in a range of countries have turned increasingly towards academic training. In the short and medium term, 'academic drift' of this kind is entirely rational: Young people see going to university as offering better prospects of escaping unemployment than entering the labour market, since – unlike jobs – they can almost always obtain university places. Higher education is, therefore, often a kind of 'holding pattern' for young people. However, whether academic training is a worthwhile long-term investment depends on the labour market situation at a future date, once young people have completed their studies at university, and that will differ from country to country. Nevertheless, international research consistently shows that despite large numbers of graduates and a shortage of workers with intermediate-level skills, the average graduate still earns more over his or her working life than a counterpart who has completed a course of vocational training.

Finally, one further consequence of the economic crisis and of the reactions of young people and young adults to it has been mobility amongst skilled workers. There has been an increase in labour migration, both within the EU – where it is relatively easy for individuals to move to and work in another country – and in many other countries around the world. The VET system not only develops but also certifies competencies, and recognition of vocational qualifications in another country depends largely on having an appropriate system for certifying the skills and knowledge that trainees have acquired. Transparency and mutual trust are particularly important here. National qualifications frameworks and special recognition processes (where appropriate, underpinned by academic and on-the-job testing) also play a major part.

These few examples demonstrate clearly that the economic crisis has had many different and, in some cases, interdependent impacts on young people's transition

from training to employment as well as on the vocational education and training system itself. This book sets out to shed light on this complex picture of cross-cutting influences.

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. Some of the papers are covering the topic of the book directly by focussing on special aspects of VET in times of economic crisis. Other authors discuss challenges and developments of VET in a more general way or by concentrating on country domain-specific approaches.

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-specific characteristics 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 has primarily a focus on different continents. The clusters of papers from similar continents make it easy for readers to get the full picture in one region and support the comparison of country-related papers. But the book starts with a variety of papers focussing in a comparative way on a bundle of different countries. The next cluster is about papers focussing on Asia including India. The next one is related to China exclusively, followed by a cluster on the European perspective. The final papers in the book are highlighting theoretical and conceptual approaches in VET research.

Series Editor's Introduction

Work is a major feature of most people's lives. Not only does it provide them with the means to meet basic needs, such as food, clothing and shelter, but the type of work undertaken by individuals and groups also has a major impact on their self-identity, social status and standard of living. Technical and vocational education and training (TVET), which is sometimes interchangeably referred to as vocational education and training (VET), is essentially mainly concerned with 'applied learning', that is, with the acquisition of knowledge, skills, values and ethics appropriate for the world of work to increase opportunities for productive work, sustainable livelihoods, personal empowerment and socio-economic development.

This Springer book series on skills development for employability (TVET) seeks to provide research-based information about many key cutting-edge aspects of TVET. The series showcases best and innovative approaches to TVET and education for the world of work. In so doing it also seeks to create an effective bridge between research, policy and practice. It is a long-standing publication programme which commenced in 2005, the various volumes in this major Springer book series providing a comprehensive, in-depth picture of current issues, concerns and prospects in TVET, as they relate to both individual countries and worldwide.

This book, which has been prepared by Matthias Pilz, examines how technical and vocational education and training (TVET) has responded and adjusted in countries worldwide during times of economic crisis. The contributors to the volume argue that although for many decades TVET has been a relatively low priority within the education for development agenda, this situation has recently and dramatically changed. In fact TVET is now centre stage for both countries and the education for development community, as nations seek to improve the relevance, effectiveness and quality of their education systems and strengthen education for the world of work and skills development for employability. The book provides an international comparative analysis of countries in Asia, including the tiger economies of India and China, the United States of America and countries in Europe. Based upon an identification and analysis of lessons learnt from countries around the world, regarding how TVET has adapted and evolved during times of economic

crisis, a well-developed theoretical conceptual framework is presented which helps make sense of how TVET has evolved during times of economic crisis.

This is an important, cutting-edge volume on a topic that is of great importance to researchers, policymakers and practitioners throughout the world. I have no doubt that this book will be widely read and that it will have an important impact on policy and practice in this area.

QAPCO Professional Chair in Vocational Studies
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August 2016

Rupert Maclean

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Part I
International Comparative Studies

Chapter 1

National Qualifications Frameworks (NQF) and Support for Alternative Transition Routes for Young People

Madhu Singh

Abstract The article deals with alternative transitions to further learning and into the world of work for young people from less qualified and marginalized backgrounds. It considers the importance of systemic, structural and institutional solutions – rather than the psychological solutions through counselling and guidance services – to youth transitions in conjunction with pathways established and maintained through NQFs. NQFs have become a new global phenomena. Many countries use them as tools for reform as well as for communication to share a common vision around mobility, transitions and recognition of all forms of learning. The paper starts with an introduction to the concept of ‘alternative transitions’. Evidence taken from 33 case studies compiled by the UNESCO Institute for Lifelong Learning (UIL) for the Global Inventory of National and Regional Qualifications Frameworks (UIL, Global inventory of national qualifications frameworks: country cases studies compiled by the UNESCO Institute for Lifelong Learning. University Interscholastic League, Hamburg, 2014; UIL, ETF, and CEDEFOP, Global inventory of regional and national qualifications frameworks. Volume I: Thematic chapters. University Interscholastic League, Hamburg, 2015a; UIL, ETF, and CEDEFOP, Global inventory of regional and national qualifications frameworks. Volume II: National and regional cases. University Interscholastic League, Hamburg, 2015b) is used to highlight whether and how NQFs are actually supporting alternative routes for youth in crisis. The paper concludes by arguing that a better understanding of NQFs could inform transition policies concerning youth. However, NQFs cannot themselves promote alternative transition routes to qualifications; other factors anchored in structural and institutional solutions need to be taken into account.

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1 Introduction

One of the aims of NQFs is to make the recognition of non-formal and informal learning and credit transfer important second-chance or alternative transition routes leading to a qualification. This could be beneficial especially for those youth who have little access to formal education but have acquired their skills, prior learning and work experience in non-formal and informal settings. Another important aim of NQFs is to clarify the formal demands in qualifications making them better understandable and transparent thus rendering it easier for youth to manage transitions. This paper deals with alternative transitions to further learning and into the world of work for young people from less qualified and marginalised backgrounds. It considers the importance of systemic, structural and institutional solutions – rather than the psychological solutions through counselling and guidance services – to youth transitions in conjunction with pathways established and maintained through NQFs. NQFs have become a new global phenomena. Many countries use them as tools for reform as well as for communication to share a common vision around mobility, transitions and recognition of all forms of learning. The paper also considers the importance of examining institutional practice (supply) in the provision of alternative access routes and the role of active labour market initiatives (demand) in promoting alternative transitions.

The paper starts with an introduction to the concept of ‘alternative transitions’. Evidence taken from 33 case studies compiled by the UIL for the Global Inventory of National and Regional Qualifications Frameworks (UIL 2014; UIL et al. 2015a, b) is used to highlight whether and how NQFs are actually supporting alternative routes for youth in crisis. The paper concludes by arguing that a better understanding of NQFs as communication and reform tools could inform transition policies concerning youth. However, NQFs cannot themselves promote alternative transition routes to qualifications; other factors anchored in structural and institutional solutions need to be taken into account. In this respect, the paper also alludes to good practice from Germany’s dual system of vocational education and training (VET).

For example, there needs to be a better shared understanding of NQFs as a beacon for standards, curricula and assessments based on learning outcomes, as well as teaching and learning and training forms (Villalba and Singh 2015). A systematic approach to learning outcomes needs to be taken into account when referencing Recognition of Prior Learning (RPL) and credit transfers to learning outcomes-based standards in NQFs. It is also important that stakeholders and institutions understand and buy into the issue of alternative routes through validation (Villalba and Singh 2015). Also, while the establishment and maintenance of pathways are necessary, making qualifications qualitatively better, more transparent and more relevant is necessary to meet the needs of the learner and employer (Mehrotra 2012).

2 Context

To understand the different contexts in the countries under consideration, the countries may be categorized in the following way (Table 1.1).

By and large, all the above mentioned developing countries and emerging economies share several common structural conditions in regard to their educational systems (UIL 2014; UIL et al. 2015a, b).

- Limited pathways between different levels of education and training system;
- Generally, only graduates of the academic upper secondary school gain formal access to higher education;
- Difficult transitions between education and work;
- Difficult transition routes back into the system for the ever-growing school leavers;
- Little information on competences and learning outcomes contained in qualifications;
- Limited qualifications and career routes;
- No comparability with other qualifications;
- Separated academic and vocational tracks that affect the future educational opportunities of youth, especially of those from vocational tracks;
- Little acceptance of applied knowledge and practical work;
- Low status of vocational education and lack of qualified teachers to train students in vocational skills;
- Poor quality of vocational training not in line with industry needs;
- Lack of private and industry participation in education;
- Hardly any systematic opportunity for in-company training in initial and continuous training;
- Lack of certification oriented second-chance qualification programmes for the informal sector;

Table 1.1 Educational status of the countries

Low basic education developing countries	Afghanistan, Bangladesh, Cambodia, Bhutan, Nepal, Pakistan, Kenya, Uganda, Ethiopia, Gambia, Ghana, United Republic of Tanzania
Advanced basic education developing countries	Maldives, Philippines, Indonesia, Malaysia, Rwanda, Thailand, Namibia, Mauritius, Seychelles, Botswana, Rwanda, Sri Lanka, Trinidad and Tobago
Emerging economies with a high proportion of both low basic education and advanced basic education populations	India, Mexico, South Africa
Developed countries and territories	Australia, New Zealand, Republic of Korea, Singapore, Hong Kong (SAR China)

Source: author's own compilation

- Lack of consideration of rigorous evaluation of social, economic, employment and labour market outcomes of education and training;
- Proliferation of training formats and programmes which are incomprehensible to employers and youth and young adults engaged in the training process.

Another issue of concern in developing countries is the high proportion of the population that does not possess a vocational certificate. This affects the supply of skilled workers in future.

Developed countries, especially countries with strong VET are also facing similar challenges. In some countries of Europe, such as in Germany, there is a decline in the proportion of youth and young adults with a vocational certification, and a growing trend towards high secondary school-leaving certificate (Acker 2013). In Europe one of the concerns is also the decline in the size of the typical student population (20–24 years old) between 2010 and 2020 from 32 million to 28 million (Orr and Hovdhaugen 2014). In many OECD countries as in the US, where upper-secondary graduation rates are relatively low, relatively few young people achieve high literacy standards, and those young people with low qualifications struggle harder to find work than in many other countries (Atchoarena 2000).

OECD studies also show that while in absolute terms the proportion of youth who are unemployed is quite small in many OECD countries, their rate of improvement vis-à-vis adults has gone down during the economic crisis of 1990. Compared to the mid-1980s young people are now more likely to combine their studies with work during the transition phase from school to work (Atchoarena 2000).

These developments and trends show that for securing the supply of skilled workers it will be necessary to improve the permeability of the education and training system, recognize the potential of youth in the transition between school and work, and promote the continuing education and training of young adults (CEDEFOP 2011).

3 Conceptual Understandings and Assumptions

The most usual way to use the concept of transitions in lifelong learning, is to describe the progress through different stages and institutions from primary school to secondary school, from upper secondary to university and on to working life (Ecclestone 2012, p. 63). Viewed from the perspective of life-stages, the concept means a graduate leaving study, entering the world of work and later entering the stage of retirement (Ecclestone 2012, p. 63). The concept also entails an understanding of the movement between different learning environments, the world of work and study (Ecclestone 2012, p. 63), and between formal, non-formal and informal settings.

Another way of making sense of the concept of transitions is to see the concept through the lens of the distinction between ‘regular transitions’ and ‘alternative transitions’. In regular transitions, school performance, academic merit and

cognitive abilities play an important role (Orr and Hovdhaugen 2014, p. 46). In this sense, school performance leads to a division between qualified and unqualified entrants to higher education (Orr and Hovdhaugen 2014, p. 47). Alternative access routes to further education and training are often state-regulated and the aim is to provide second-chance opportunities for youth with low educational and marginalised backgrounds to enter the educational system (Orr and Hovdhaugen 2014, p. 51).

In many educational systems, alternative transitions are made possible by removing academic success, as the determining factor of entry to higher education. Irrespective of this, they have typically attained training and/or have work experience (Orr and Hovdhaugen 2014, p. 51), which are recognized through mechanisms for the RPL. Also, many youth and young adults who are unemployed or underemployed due to the economic crisis, may need to redirect their educational and work careers. The skills they have acquired in a specific sector might not be visible or acknowledged in other sectors, where they might, nevertheless, be useful. The knowledge and skills of these young people need to be identified, recognised and utilized in a more efficient manner. Through RPL young people are given the possibility to give evidence of their potential and ability for further learning and study (Villalba and Singh 2015).

The utilization of agreed standards in second-chance education is an important feature of RPL routes and credits transfers leading to a qualification. Generally speaking, RPL processes aligned to reference standards in NQFs help to clarify the formal demands and requirements in a qualification and make visible the learning outcomes and competences that are necessary in order to achieve the qualifications.

National references are oriented to either: (1) standards in existing formal curricula; (2) learning outcomes-based qualifications standards within a NQF; or (3) occupational standards. One way of achieving a qualification is when second-chance education is standardized through a curriculum with equivalence to formal education. In Belgium, the Secondary School for Adults (SSA) is part of the regular educational system and organises courses appropriate for adults. A second way is when second-chance education is defined in an NQF or formal standard and assessed against learning outcomes. The relationship between second-chance and the qualifications level helps the student to progress to further levels of formal education. Finally, qualifications can be attained in relation to occupational standards and training modules as standardised national frames of reference. Competences acquired non-formally in vocational training and/or informally in practice can be documented and thus made eligible for the transfer of credit. Training modules describe what learners should be able to do in terms of occupational competence – regardless of the particular learning venue (Acker 2013).

RPL is an area for many reforms currently seeking to provide alternative transition routes in relation to social inclusion. RPL in South Africa addresses three main equity groups. The ‘access group’ consists of under qualified adult learners who wish to upgrade their skills and improve their qualifications, and/or who lack the minimum requirements for entry into formal learning programmes. The ‘redress

group' comprises workers, whether currently employed or unemployed, who may have worked for several years and gained considerable skills but were prevented from gaining qualifications in the past due to restrictive policies; and finally, the group of 'early school leavers' consists of candidates who have left formal education prematurely and built up learning through short programmes over a number of years (Samuels 2013). In Indonesia (Indonesian Ministry of Education and Culture 2012) RPL serves three purposes. First, to provide wider access to formal educational pathways; second, recognize learning outcomes from different forms of learning outside the formal education system for the purpose of awarding an equivalent degree. Finally, according to Law no. 14/2005 pertaining to teachers and lecturers, recognize persons with expertise in a particular industry, as lecturers in higher education. In Gambia, RPL is considered particularly important for unemployed youth, young adults who wish to upgrade existing qualifications by combining a previous certificate with work experience and youth who have left a programme before completion, and who wish to count that learning towards another award. In India, RPL is expected to provide following possibilities for youth: access to education and training programmes; access to exams; exemptions to a part of study programme; certification of standard units; Credit Accumulation and Transfer (CAT); recognition of qualifications.

Alternative transitions is also a core issue in a country's lifelong learning strategy which implies linkages between various learning settings and increasing permeability between education and training. Lifelong learning means improving progression pathways both vertically and horizontally and strengthening foundations of learning. It points to the necessity of filling a number of gaps within the system – for example, introducing work-related courses in the compulsory stages, designing modular systems, opening diversified paths to higher education. It also suggests the importance of generating flexible and diverse links between formal and informal sectors, which are sensitive to the educational and occupational trajectories of underprivileged groups. In many countries, laws and ordinances have been introduced to increase permeability of the education and training systems. In Mexico, the conception and development of Agreement 286 of the Ministry of Education (issued on 30 October 2000) (and associated Agreements) is designed to give workers and learners access to all levels of the education system by offering an alternative pathway to that provided by the formal system. In accordance with Agreement 286 the National Council for Standardization and Certification of Labour Competences (CONOCER) promotes the development of certifiable standards for recognizing the competences of employers and workers, accredits the assessment and certifications unit standards, and issues official 'labour competence certificates'. This Act also allows equivalences of competence certificates with credits of formal education programmes at the vocational and professional levels (García-Bullé 2013).

4 NQFs and Alternative Pathways

To examine whether and how the recognition of alternative transitions are actually being achieved through the use of NQFs, this section will first consider the concepts and principles behind NQFs and their potential outputs as reflected in countries' policy objectives and in the work of implementing the European Qualifications frameworks (EQF) (CEDEFOP 2009). NQFs have the potential to:

- Clarify skills, knowledge and attributes young people gain through completing a qualification;
- Increase transparency of the formal requirements in qualifications – expected learning outcomes, standards, and evaluation criteria – at different levels so that youth are better able to manage transitions;
- Increase sense of security among youth and young adults that the outcomes of their learning process will at least be equal to a national standard and meet the skills demanded by employers. Locally defined qualifications, on the other hand, may only give this security to those who have access to good educational institutions and receive a certificate issued by an accredited training provider;
- Improve the links between education and work, to set up new pathways from education to employment and to reduce barriers to learning, for example, by using new forms of pedagogy and assessment (CEDEFOP 2009);
- Enhance currency of qualifications through endorsement of qualifications by national authorities who in turn have consulted relevant stakeholders particularly social partners;
- Include RPL in the attainment of qualifications providing those youth who have learned on the job an important second chance pathway to retraining and upskilling opportunities;
- Open up of qualifications to non-formal and informal learning.

Among the many broad goals NQFs are claimed to achieve, is the goal to support the development and maintenance of pathways for accessing qualifications, and assisting people to move (vertically and horizontally) easily between different education and training sectors, and between qualifications of the different sub-systems. Both New Zealand and Australian Qualifications Frameworks (AQF) have an explicit 'pathway strategy'. In the case of the New Zealand Qualifications Framework, each qualification outcome statement includes the following pathways: graduate profiles, which identify the expected learning outcomes of a qualification. These are described in terms of what a learner will know, understand and be able to do when they achieve the qualification. Educational pathways, which identify other qualifications a graduate can enrol in after completing the qualification in question. Where qualifications are stand-alone and do not prepare graduates for further study, the outcome statement should make this clear. Employment pathways (or contribution to the community) which identify the areas in which a graduate may be qualified to work, or the contribution they may make to their community having achieved the qualification in question (Keller 2013).

Table 1.2 NQFs and alternative progression pathways

Alternative transitions	Countries
Quality-assured qualifications in continuing and post-secondary and employment fields	Hong Kong (SAR China), Singapore, New Zealand, Australia, Maldives, Malaysia, Mexico
Alternative transitions between VET and higher education	Sri Lanka, Bhutan, India, Republic of Korea, Australia, New Zealand,
Transitions between primary and post-primary education and VET	Nepal, Ghana, India, Uganda, Bhutan, Ethiopia, Kenya, Gambia, Botswana, Mauritius, Namibia, Seychelles
Alternative transitions from non-formal education to formal basic education	Bangladesh, Gambia, Philippines, Mauritius, Thailand
Certification-oriented second-chance qualification programmes for/in the informal sector	Ghana, Gambia, Afghanistan, India, Bangladesh, Ghana, Mauritius, Mexico

Source: author's own compilation

Similarly, in the new documents of the strengthened AQF in 2011 it is stipulated that by 2015 all Australia courses, whether in VET or higher education, must be compliant with the AQF, and need to inter alia, show how they provide preparation for 'further learning' as well as for work. To underline this requirement, the AQF document incorporated a strengthened "pathways policy" (AQF Council 2011, pp. 75–78).

In analysing the impact of NQFs on alternative transitions we can discern some distinct pathways depending upon the different structures in the education and training systems and the different national regulations and labour market challenges existing in the countries/territories. Five pathway types are presented (Table 1.2).

4.1 Quality-Assured Qualifications for Youth and Young Adults in Post-secondary and Employment Fields

A major pathway strategy in countries and territories such as Hong Kong (Special Administrative Region (SAR), China), Singapore, New Zealand and Australia is moving the continuing and post-secondary education and employment training, which include all learning outside the formal educational system, towards a qualifications framework (QF). In these countries, the QF is intended to act as a unified system of qualifications allowing people in the transitional sector to articulate academic and vocational education and to gain a quality assured qualification. Hong Kong's strategy can be seen in relation to its 1990s comprehensive education reform where the continuing education sector came to be regarded the fourth pillar of the lifelong learning system after, general, Technical and Vocational Education and Training (TVET) and higher education (Cribben 2010). Other countries such as Malaysia, India and Maldives have similar ambitions with their qualification

frameworks. In these countries, continuing education sectors cover a wide range of non-formal programmes which embrace general interest and second-chance education as well as courses leading to more specific professional education. In future such continuing education programmes should lead to qualifications which are regulated and quality assured.

To enable youth to better manage transitions and get better qualified jobs, the Maldives Accreditation Board (MAB) assigned levels to all accredited courses and included all non-formal post-secondary qualifications under one banner, from initial certificates to advanced academic, technical and professional qualifications. This has encouraged alternative transitions and lifelong learning. The MAB includes a full listing of all approved programmes linked to qualifications on its website, along with the associated levels and objectives of the programmes, for the information of learners and employers. Some students or workers may achieve only some of the competences required for a full technical and vocational qualification. Nevertheless, they are still able to receive an official record of that partial qualification (Certificate of Achievement). The credit system allows youth to receive credit for all achievement, no matter how modest (MQA 2010). This is important to give youth from disadvantaged backgrounds a sense of achievement and to remove some of stigmatisation of not having a qualification.

4.2 Alternative Transitions Between VET and Higher Education

VET suffers from social stigma and has a low prestige in society. Careers are primarily defined through attendance in reputed academic institutions in the general education sector rather than in the VET sector (Müller and Shavit 1998). Participants of VET courses are stigmatized and often considered as persons who are unsuccessful in general education (Pilz forthcoming). Writing in the context of Singapore's vocational education system, Chong (2014) states that despite the success of government initiatives, vocational education suffers from a second-class status. Moreover, vocational education represents a dead-end since vocational and general education tracks are separated. Currently, therefore many youth, especially youth in the vocational secondary and vocational training institutes, are denied access to higher education. However, many countries expect to rectify the present structure of their educational systems, by offering vocational education at higher levels to vocational students at Grade 11 and 12. As part of their NQF implementation, India and Sri Lanka have created Universities of Vocational Technology (Univotech) to facilitate pathways to higher education for youth from TVET. These youth are otherwise unable to enter conventional universities that either want to admit the best qualified students or students themselves do not see these traditional universities as a realistic opportunity for themselves.

To accommodate the formation of alternative transition pathways to vocational universities, NQF developments in these countries include diploma and advanced

diplomas that lead to degrees in the vocational universities. To respond to the demand of youth and young adults in this transitional sector, the government of India is ensuring that vocational institutions, such as vocational education providers, community colleges, industrial training institutions (two years after class ten) are allowed through accreditation from the respective State Board for Vocational Education (SBVE), to award diplomas and advanced diplomas in addition to Higher Secondary School (HSC) certification. There is also a move in India to create new degrees of Bachelors, Master's and Doctoral programme in vocational studies as per the provisions of Sec 22 (3) of UGC Act, 1956 for students pursuing vocational higher education in vocational universities (UGC 2002). In recognizing the transitional sector, arguments are very often made about the necessary or feasible size of the educational stage in question. In India, of the 220 million children who go to school only around 12 % between the ages of 18–24 are enrolled in higher education. The government expects to raise this percentage to 30 % by 2020 (Indiainfoline 2011). Vocational universities would help to remove the dead ends in the TVET system and also help to widen access to higher education through alternate routes.

However, the establishment of alternative routes is not sufficient itself to make transitions possible other structural reforms are also necessary. In the Republic of Korea education and training reforms in schools are to be geared to industrial and business demands so that youth may progress to technical higher education. In some schools, there is a tendency to increase the share of common curriculum between academic and vocational streams to as much as 75 %. The Hong Kong Qualifications Framework (HKQF) through the development of Specification of Competency Standards (SCSs) developed by industries are serving as a useful reference for Applied Learning Courses under the new structure for senior secondary education. These courses will provide students with a wider range of pathways, enabling them to master the skills required by various industries (Education Bureau-Qualifications Framework website). In Bhutan negotiations at the institutional level with the Royal University of Bhutan and Ministry of Education in linking the route from certificate level courses to diploma and degree level courses are being intensified to ensure progression from the certificate to the diploma and degree level, as foreseen in the Bhutan Vocational Qualifications Framework (BVQF) structure.

It may be useful to share the approaches Germany adopts in vocational education at the level of universities. Vocational universities (referred to as *Universities of Applied Sciences* in Germany) in the federal states of Baden-Württemberg, Saxony, Thuringia and Berlin grant degrees in the vocational streams of these universities. A course of study at a University of Applied Sciences (*Fachhochschulreife*) consists of six semesters on the 'dual-track plan', i.e. university-level coursework combined with on-the-job training in industries. Students can receive their first occupational qualification after two years of study. After three years, students can apply for a degree. The German case shows that qualification pathways are not enough; private participation from industry in curriculum design, placements and funding is critical for the success of youth transitions into the world of work. Also it is important to mention the special case of Germany that despite the tight link between academic senior secondary school completion (*Abitur*) and universities, state-regulated pathways are available for youth

from some vocationally-oriented schools (*Fachoberschule* or *Berufsfachschule*) to Universities of Applied Sciences. About 70 of those receiving a qualification from Universities of Applied Sciences came from a specialized vocational school which follows vocational training (Autorengruppe Bildungsberichterstattung 2012, p. 274; Orr and Hovdhaugen 2014, p. 52). This shows that even though the attainment of an unconditional general entry qualification – like the Abitur – varies from state to state, overall, the entry qualification is now much easier to obtain for those who have taken a vocational route through the education system and in fact a new training market is emerged that caters to this demand (Orr and Hovdhaugen 2014, p. 53). However, the second chance route mainly comes from the vocational sector of the education system (Orr and Hovdhaugen 2014, p. 58).

In Australia the emerging market of providers providing diploma and advanced diploma courses are generally of the view that credit transfer initiatives improve the link between vocational education and higher education, however some argue that diploma and advanced diploma courses provide jobs for graduates needed in the economy and should not be seen as subsets of university degrees (Smith and Kemmis 2014).

4.3 Transitions Between Primary and Post-primary Education and TVET

In a large number of countries such as Bangladesh, Nepal, Ghana, a high percentage of youth has low levels of basic education and leaves the school system during or before upper secondary school. In these countries NQFs are being used in the TVET sector to promote horizontal transitional routes between primary and post primary education and TVET. The aims of these alternative or second-chance routes are to overcome the traditional, dichotomous vision in which primary and post-primary education is viewed as separate from TVET (ADEA 2011) and promote transitions between education and work for early school leavers. In Nepal, since the first major exit point from the general education system is after primary education, the bottom layer of the qualifications framework in the TVET certification system is designed accordingly at the post-primary level (SDC 2013). The National Skills Testing Board (NSTB) certification system in the TVET sector is intended to help these transitions run smoothly. Table 1.3 shows the entry and exit points from the general education system to the TVET system. The two most critical points are after completion of primary education and after completion of lower secondary education.

This structure allows qualifications at each level to be acquired in either a linear or a modular fashion. Candidates may choose either to sit one all-encompassing test or to accumulate credit points by the successful completion of individual modules. Training may be delivered in a variety of ways, including long-term residential courses, modular short courses, flexible morning, evening or weekend classes, etc.

Table 1.3 Entry and exit points from general education system to TVET

Educational level	School completion rate of the enrolled	National skills testing certificate system	Non-formal learning
Tertiary		4	Lifelong learning
Higher secondary		3	Skills training
Secondary	45 %	2	Livelihood support training
Lower Secondary	65 %	1	Non-formal education
Primary	90 %	Basic level	Adult literacy

Source: SDC 2013

Providers may offer any possible combination of centre-based and work-based learning, including on-the-job training, internships and apprenticeships in public and private enterprises, outreach programmes, real-life projects, etc. The reforms in the TVET system under the NVQF also cover non-formal education and adult literacy programmes, which play an important role in improving individuals' work performance and employability and promoting lifelong learning.

In this way, Nepal is able to build up a transitional sector by providing educational opportunities for young people who lack access to institution-based TVET provision. At present, TVET leading to diplomas and certificates is available only in institutions (which include technical schools and training centres, affiliated technical colleges and institutes and the so-called 'annex schools'). However, plans are underway to make the TVET pathway more attractive to young people by embracing all forms of training: formal, non-formal and informal (SDC 2013).

Many Bangladeshis leave school before completing Grade 8 of general education, and as a result are not able to enroll in formal skills programmes. In order to overcome this barrier, the government will work with its partners to introduce reforms to remove the Grade 8 prerequisite from formal courses and replace it with course-specific entry requirements and challenge tests in which workers are challenged to demonstrate what they say they know with respect to the courses they expect to be admitted into. They help to determine the level of the qualification the worker is expected to acquire and the courses they get entry into. In this way the National Technical and Vocational Qualifications Framework (NTVQF) will allow those with limited education to undertake formal courses leading to nationally recognized qualifications (Arthur 2009).

By relating the NTVQF to the existing qualifications structure, transitions between general education and TVET are made possible. Students who fail the academic component of the senior secondary school certificate (vocational) may nevertheless be assessed as competent in the National Skills Certificate (NSC) of the NTVQF. They receive the appropriate NSC award and can continue their studies to gain NSCs at the higher NTVQF levels. Vocational education programmes in senior secondary schools are being revised to ensure that their vocational components are based on industry competency standards, and that students only receive

NTVQF qualifications if they have been assessed as competent. Pre-vocational Levels 1 and 2 are available in all training institutions to encourage students with low education levels to enter skills training courses.

The BVQF already determines entry to formal TVET courses after seven years' primary and four years' secondary education (Bhutan MoLHR 2010, p. 7). In Ethiopia, strengthening progression pathways between non-formal post-primary education and the TVET qualifications framework is one of the key objectives of the Ethiopian NQF (Ethiopia MoE 2008). In Kenya, progression pathways from primary to equivalent levels in the TVET sector are being promoted through the TVET Curriculum Development Framework (TCDF), which was established in 2010 according to Kenya Qualifications Framework (KQF) occupational standards. The TCDF is also helping to link youth polytechnics (YP) and vocational and industrial training (VIT) to formal TVET provision and certification oriented qualifications (Kenya MoE 2012).

4.4 Transitions from Non-formal Education to Formal Basic Education

King (2011) points to studies (RECOUP 2011) that show that the low prior levels of basic education and low quality of formal education of poor segments negatively impact on their access to and acquisition of technical and vocational skills, as well as productivity and higher incomes. Marginalised groups who have access to non-formal education programmes running parallel to the mainstream education, often-times find it difficult to re-enter the formal education system because the quality of that non-formal education does not come up to the standard of formal education at the equivalent level. However, we find that many countries are attempting to deal with the issue of low quality non-formal education and to bring it at par with the formal school.

In Ghana, since non-formal education is unconnected to re-entry into the formal education system, the new national qualifications system will be responsible for the recognition and assessment of such education and training. The TVET council will liaise with non-formal agencies to introduce the learning of relevant skill trades into their training programmes. This will eventually link non-formal skills training to the national TVET qualifications framework (Baffour-Awuah 2013).

The Philippines government envisions one national test to cover both formal and non-formal education to be administered for both school students and non-formal community-based learners. Additionally, functional literacy (which is the goal of non-formal basic education) is being introduced into the formal basic education. Thus, instead of non-formal system being a parallel system, it is serving as a 'bridge' or 'transition route' to the formal system and at the same time elements of non-formal and informal education are being integrated in the mainstream curriculum. By creating such synergies between formal and non-formal education the Philippines'

Department of Education hopes to accommodate the recognition of outcomes from non-formal and informal learning in the Philippines Qualifications Framework (PQF). In Thailand, the vocational certificate curriculum (equivalent to lower secondary education in the formal school system) and the non-formal occupational certificate curriculum are helping learners to complete secondary school by combining academic and vocational education and at the same time serving the interests of various groups of disadvantaged people.

4.5 Certification-Oriented Second-Chance Qualifications for Young People and Adults in the Informal Economy

The intention with NQFs in many countries with large informal sectors is for new occupationally-oriented TVET qualifications to be offered to youth and young adults who have acquired skills in the informal sector. The lack of formal qualifications and certification makes informal sector workers vulnerable. They earn lower wages, their productivity is low, they are exploited by their employers, and they are often disadvantaged in gaining access to formal education. However, policy-makers in several countries with a large informal sector are becoming increasingly aware of the insufficient recognition of existing skills and informal learning, which prevents labour mobility. Governments recognize that these shortcomings lead to a serious wastage of skills in the economy. As a result in many countries the NQF has been specifically designed to address some of these challenges in informal sector skills development. The scope of the Bangladesh NTQVF is designed primarily to embrace the existing workforce and those entering the workforce, including recognition of skills workers have acquired in the informal sector. In India, where NCEUS estimated that in 2005 there were 395 million workers out of a workforce of 423 million belonging to the informal sector (NCEUS 2009), the National Skills Qualifications Framework (NSQF) aims to develop certification-oriented qualification programmes for youth and young adults in the informal sector and to make these qualifications uniform and comparable by doing away with the differences in course content, entry requirement, formats and duration of vocational courses across institutions and states or union territories (UTs). This would improve the acceptance of many of the courses and the resulting certificates on the labour market. A case in point is the ‘certificate’ course in plumbing (sometimes described as sanitary hardware fitting), which is offered in different venues with a variety of formats, durations and entry requirements (Mehrotra 2012).

Evidence from countries shows that NQF and RPL mechanisms cater to certification-oriented alternative transitions in informal sectors in several ways.

First, the foundation level acts as a stepping stone into entry-level occupational qualifications for early school leavers, who have not completed eight years of schooling, and for young adults and trainees with a non-formal training background. In Ghana, as a first step, the lowest two levels of qualification, Proficiency I and II, recognize competences obtained via traditional informal apprenticeships. India’s

NSQF too has organized RPL at the entry levels leading into levels 1–10 of the qualifications framework (Mehrotra [forthcoming](#)). In Bangladesh's NTVQF two prevocational levels have been established that cater to the underprivileged and low-educated groups in society. The Mauritius Qualifications Authority has developed a qualification entitled National Certificate in Adult Literacy Level 1 and has also extended the RPL to adult literacy.

Second, more and more informal and new formal apprentices are being registered for a qualification in the NQF. In Bangladesh a project on RPL has been undertaken with the ILO (Arthur [2009](#)). Currently about 80 % of new formal apprentices are enrolled for a NTVQF qualification with the Bangladesh Technical Education Board (BTEB); 90,000 informal apprentices are also registered for a qualification. These are people who have been assessed as competent in one or more standard units (making up a full qualification) through an RPL process, and who have the option in future to complete a full qualification (ILO [2013](#)). The processes of workplace learning, recognition of learning and certification can be repeated in several cycles until after some years the skilled worker is able to move into a supervisory role. This 'ladderization' system will be based on modularized competency-based training within the NTVQF.

Third, RPL in relation to NQF-aligned certification is an important instrument particularly in occupations for which demand is high. In Sri Lanka so far, the largest number of certificates issued through RPL has been awarded to beauticians, hairdressers and bakers.

Fourth, building the capacities of master trainees and assessors is an important element in supporting the RPL and certification system. In India's agrarian informal sector, the Agriculture Skill Council of India and systems set up by the National Skill Development Corporation (NSDC) have gathered master trainers and assessors together to form a panel, and trained them in supporting quality measures in the RPL and certification (Salooja et al. [2015](#)).

Fifth, in several countries, Sector Skill Councils (SSCs) are now driving skills development in the informal economy. They are developing qualification packs (QPs) for different job roles in the interfaces of the formal and informal sectors. These packs contain national occupation standards (NOSs) or competency standards with the involvement of professionals from industry and curriculum development experts.

Sixth, Bangladesh is showing the way to other countries to accommodate and accredit existing training providers. Competency-based courses are registered with the BTEB. Approximately 50 % of training providers are registered with the BTEB and are delivering recognized competency-based training and assessment. Recently the BTEB also accepted a competency-based qualification for the training of trainers. As a result, industry-based trainers for the first time outnumber TVET institution-based trainers. The BTEB is also implementing the Skills Quality Assurance System, and reports to the NSDC twice yearly. Private training providers who wish to issue nationally recognized qualifications under the NTVQF must be registered and accredited under the new Bangladesh Skills Quality Assurance System (ILO [2013](#)).

Finally, in a large number of countries structural changes within the existing traditional apprenticeship system are being undertaken. Cameroon's Intersectoral Craftworkers Association (Interprofessionel des Artisans – GIPA) is currently structuring on-the-job training into progressive modules, which entail regular assessments and lead to a level of vocational qualification. Benin is converting the traditional apprenticeship system into a regulated dual training system (leading to a vocational skills certificate and occupational skills certificate). As Walter (2007) points out, these changes retain the best aspects of learning by doing, while at the same time progressively incorporating a cognitive dimension of better understanding and improving what is learned by doing.

5 Credit Systems: Routes into Qualifications and Access to Further Learning and the World of Work

There is a growing tendency in the countries studied to make provision for CAT in their assessment systems, and to see RPL as an assessment and credit process. In Hong Kong a CAT system provides the flexibility needed to suit individual learners' circumstances and minimize duplication of training. The CAT system also allows learners to accumulate credits from diverse courses and all modes of learning including class attendance, private study, online learning, practical learning, examination, etc. and convert them into a recognized qualification. In Indonesia a credit transfer scheme is built into bridging programmes which aim to boost the performance of individuals who fail to meet the minimum requirements of the institution conferring their credits.

In New Zealand RPL is part of the credit system. Education providers in New Zealand are required to have their own administrative and practical arrangements in place for the RPL and credit recognition and transfer. This applies to employing organizations, industry and professional bodies and educational organizations, and includes a number of institutes of technology and polytechnics, which have 'Centres for the Assessment of Prior Learning'. The New Zealand Qualifications Authority (NZQA) has established the following operational principles for credit recognition and transfer that apply to providers across all the education sectors: the qualification, course and programme development and design should promote and facilitate credit recognition and transfer; the transparency in credit recognition and transfer decision-making across the education system is critical factor in supporting and encouraging the ongoing involvement in education and training; credit transfer as a result of RPL or recognition of current competences is of equal standing to credit awarded through other forms of assessment and should be carried by the learner once awarded (Keller 2013). The AQF has recommended that 50 % credit into a three-year bachelor degree (AQF level 7) be provided for an advanced diploma (AQF level 6) (AQF Council 2011).

In Germany, the development of competence-oriented training modules in the context of implementing European Credit system for Vocational Education and

Training (ECVET) has proven to be successful in recognising prior learning outcomes and competences of youth from marginalised backgrounds (Acker 2013) as part of transferring credits from prevocational training to in-company apprenticeships. This has helped to shorten publically funded initial vocational education and training (IVET) for youth.

The training modules are distinguished by a set of characteristics (Weiß 2013). They are standardized, taught for a defined length of time and oriented to work processes for the occupation and field of employment. Taken together they comprise the entire occupational profile. They are not specific to any target group or learning venue. They take into account the current training regulations governing intermediate and final examinations. Full occupational status is achieved when all the contents of the training modules have completed and the chamber examination has been passed successfully. And finally, they are formulated in terms of competences and described in terms occupational competences and what the learners should be able to do upon completion of a module. The training modules were implemented in a variety of subsectors of IVET: (1) Work placement financed by the company itself; (2) Prevocational training schemes funded by the Federal employment agency as part of IVET for those who needed to transfer to in-company apprenticeships; (3) School-based prevocational training year; (4) As part of continuing VET for unqualified older workers in companies.

Prior competences were validated within prevocational courses on the basis of internally developed common standards. This served a credible evidence of occupational proficiency of youth and was in keeping with the Vocational Training Act to improve the opportunities for recognising prior vocational learning towards the mandatory period of IVET and granting admission to the final examination as an external candidate (Acker 2013). Experience from Germany has shown that modular concepts facilitate admission of external candidates to the final examination. This is because modular concepts correspond to the specifications in the framework curriculum and are normally accepted by the chambers as evidence for exam admission. It is less likely that applicants are admitted to chamber examinations as external candidates on the basis of the presentation of evidence of occupational competence (Grund and Kramer 2010). Rather validation of prior work experience is integrated as part of prevocational training and credit transfer to in-company transfer.

6 Conclusion

In conclusion, evidence using some examples from UIL's compilation of NQFs for the Global Inventory of National and Regional Qualifications Frameworks, has shown how alternative transition routes for youth and young adults are being linked to developments of NQFs, RPL and credit transfer. Qualifications Frameworks act as a beacon for learning outcomes-based standards, curricula and assessment criteria, as well as teaching and learning forms. Furthermore NQFs have been shown to

provide the necessary reference point for alternative transitions through RPL and credit transfer and accumulation. All this means that optimising alternative routes within a quality assured environment is being seen much more as a necessity by all stakeholders. However, the paper has also pointed out that there are other systemic, structural and institutional factors that need to be taken into consideration to make alternative transitions happen on a sustainable basis.

We found the following prerequisites to be important.

- Calibrating NQFs with other broader policy objectives such as social inclusion, poverty reduction and informal sector skills development.
- Promoting targeted initiatives for youth from low-socio-economic and educational backgrounds in regard to alternative pathways.
- Addressing coordination and issues of trust between institutions falling under different jurisdiction.
- Addressing qualifications not only in the formal system but also qualifications outside the conventional system in continuing education and training and the world of work. This means level descriptors in qualifications frameworks need to reflect a huge diversity of purposes, institutions, traditions and cultures.
- Providing financial incentives for RPL and credit transfer for a wider range of youth.
- Ensuring that education providers respond to the transitional market by providing explicit pathways into and out of qualifications and grant credit towards learning at the next higher level.
- Promoting the award of qualifications or partial qualifications to non-formal bridge courses or preparatory training for disadvantaged groups to enhance the self-esteem of disadvantaged groups.
- ‘Being qualified’ should not be associated with simply getting a degree or certificate but rather being able to apply and demonstrate the competence to solve a problem in the context of particular task.
- Following-up legal regulations with supportive activities at the institutional levels and through labour market strategies, ensuring that the state-regulated pathways in NQFs have labour market and employment outcomes.

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Chapter 2

Finding the Finishing Line – Career Support for Experimentation: Transitions and the Role of Lifelong Learning

Antje Barabasch

Abstract Mid-life career transitions and individual approaches to learning related to them have been in the centre of two biographical European research projects. This chapter discusses how situations surrounding structural support for career management in Denmark, France, Italy and Spain. The ways in which individuals draw on these resources or navigate their careers without structural support is illustrated by means of life and career stories of three adults. Their narrations illustrate how individual dispositions related to self-efficacy, agency, motivation, and self-construction shape individuals responses at career cross-roads. These stories illustrate that preparation for career adaptability and the development of career management skills is essential for adults to successfully navigate such decisions. In addition, having access to career counselling and guidance might prevent a number of misleading decisions over a life course and seems to require more attention among policy makers.

1 Introduction

Economic developments over the past 25 years, more commonly those related to the recent economic crisis in Europe, have had a dramatic impact on adult career pathways. Career transitions, often interrupted by times of unemployment, have increased. The current economic atmosphere has forced individuals to develop new attitudes toward their professional pursuits. Adults are today more concerned with identity development, a correction of their professional pathways and self-fulfilment which leads to more experimentation in the designs for living. Changing family situations, changing living spaces at home, returning to old passions or discovering

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new vocational callings but also coping with career set-backs, trauma or burn-out are not maneuvered easily and require public support structures.

European policy has started to address these needs and calls for the further development of career guidance policies and practices in the Member States (Cedefop 2008a, b, 2011a, b; Council of the European Union 2004, 2008). While the various forms of and possibilities to engage in lifelong learning are increasingly recognized by the majority of citizens, individuals still require more consistent support across their lifespan and societies need to work on constraints within their institutional frameworks (Da-Fonseca 2015).

Biesta (2008) capitulates that there is an urgent need for the support of individuals to help them navigate their way through an increasingly complex work and life context, which includes a large variety of educational offers one can choose from, and requires flexibility and adaptability. Career adaptability, understood as the capacity of individuals to negotiate transitions successfully (Savickas 2008) refers to the readiness and resources available to cope with career transitions as well as other work related challenges. There are five inter-related competencies that comprise career adaptability: control, curiosity, commitment, confidence and maintaining a positive and optimistic attitude to the future (Savickas et al. 2009) as well as adaptability to different work environments and personal change management (Bimrose et al. 2011).

Career guidance and counselling is, therefore, a key component in any lifelong learning strategy. Individuals must take into consideration the imposition of manifold outside forces that individuals increasingly have to manage throughout their lives developing resilience is particularly relevant to maintain once physical and mental health as well as life satisfaction (Council of the European Union 2008; Field 2010; OECD 2004). It is defined as:

The extent to which we keep our spirits up when things do not work out as we would have liked. This includes how resistant we are to career barriers or disruptions affecting our work. (London and Stumpf 1986, p. 26)

This implies that the development of certain coping strategies, including emotional capacities, to overcome structural and/or dispositional barriers (Bimrose et al. 2008; Cardoso and Moreira 2009; Hearne 2010).

Career guidance and counselling is the public response to the need for career management. Trained career counsellors can empower individuals by supporting the development through refining their career management skills (Council of the European Union 2008). There is controversy throughout Europe regarding the definition and function of career management skills (Sultana 2012) but in the context of research on transitions it includes 'career planning', 'transition skills', as well as 'job-search skills'. It can be further defined:

Career management skills refer to a whole range of competences which provide structured ways for individuals and groups to gather, analyse, synthesise and organise self, educational and occupational information, as well as the skills to make and implement decisions and transitions. (Sultana 2012, p. 229)

Career options and choices are limited by context, but individuals can use career self-management to negotiate their own position within these constraints (King 2004).

There is policy interest in how different types of learning interact across the life-course and how they may facilitate mobility in the labour market; thereby regarded as one of the key challenges identified in ‘Key competences for a changing world’ (Council of the European Commission 2009). The importance of adult learning is widely acknowledged in policy and it is cast in terms of increased employability (Council of the European Union 2009). The ways in which adults engage in learning in order to prepare themselves for career transitions depends among other factors on institutional frameworks, such as the nature of the education and training system, its permeability, access to welfare supply for career re-orientation and retraining and access to guidance and counselling (Brown et al. 2001; Brown and Bimrose 2014).

Between 2012 and 2014 the European Centre for the Development of Vocational Training (Cedefop)¹ has commissioned two studies concerned with mid-life career transitions and the role of learning for which a biographical research approach was chosen. This qualitative research was meant to provide useful support for policy makers and other stakeholders, e.g. in the domain of career guidance and counselling. The collected narratives provide meaningful insights into the real life experiences of individuals to better understand the issues at stake from an individuals’ perspective and in relation to national and European policies that shape the structural frameworks in which these individuals navigate their lives.

Both projects were managed by Cedefop and members of the Institute for Employment at the University of Warwick. Methodologically this was based on the concept of strategic career and learning biographies (Cedefop 2016; Barabasch and Merrill 2014; Brown et al. 2012), which implies that the voices of participants were heard and had a central place in the research process (Cedefop 2014a, b). When telling the story of career transitions individuals tend to prioritise certain episodes in ones’ life and attach special meaning to them. They become strategic stepping stones in the explanation of pathways and outcomes (Brown 2015). Based on a rough interview guideline individuals were encouraged to reflect upon, interpret and give meaning to their work and learning experiences within their social context (Barabasch and Merrill 2014). The collected narratives and their analysis revealed information about the manifoldness of reasons for and strategies to cope with career transitions. Researchers were also able to uncover the interrelationship between private lives, individual dispositions and public support structures or their absence (Bimrose et al. 2011; Fleig-Palmer et al. 2009; Sharf 2010). In this chapter the findings from the two studies in this regard will be discussed with a particular emphasis on the role of career guidance, counselling or coaching, experiences with it and the provision of measures, to ease transitions and access to further learning, in relation to the existing welfare state. Although many individuals see career changes as an

¹The author worked until September 2015 as VET expert at Cedefop. The views expressed in this article are those of the author and do not necessarily reflect the official policy or position of CEDEFOP.

opportunity for a new professional future, there is also the risk of deskilling, unemployment and social exclusion. To protect oneself from such undesirable outcomes, individuals may draw on resources such as established networks for social support, engage in further learning and make use of policy measures, e.g. guidance or active labour market policies (Barabasch et al. 2014).

The first of the two Cedefop studies focused on mid-career workers (35–45 years) who had at least two career changes in their lives (Cedefop 2014a, b). All participants were professionals with some upper-secondary degree, mostly in vocational education and training. Researchers from Italy, Spain, Denmark, France and Germany, collected 25 biographical interviews among mid-career adults in each country and interviewed about half of the participants twice. A second study, to be published in 2015, focuses on low-skilled adults and their approaches to learning and career transitions. In this case, researchers from seven countries (UK, Germany, France, Poland, Czech Republic, Denmark and Italy) conducted interviews using a similar approach among 15 individuals in each country (25–40 years).

In this chapter, first the challenges of career management in the context of life-long learning and structured support will be outlined. Given the examples from Denmark, France, Italy and Spain state support for career transitions is described. Some of the results of the two Cedefop studies on mid-career adults and career transitions will be introduced by means of presenting selected narratives and the career transition issues attached to them. The correction of professional pathways based on further identity development and the desire for self-fulfilment will be of particular interest. These professional pathways form interrelationships between agency, identity, construction and public support structures. The situation of structural conditions within selected countries is outlined in more detail in order to understand the way in which conflicts arise and how individuals cope with them in their career transitions. The concluding part of the chapter introduces some lessons for public policy in support of mid-career transitions.

2 The Challenge of Managing Career Transitions and Striving for Identity Development

Economic pressure and accompanying social distress due to being made redundant at work or in need of finding a new career orientation in life, has led more adults seeking career advice and intervention support (Bimrose and Barnes 2007). Individuals increasingly are facing the challenge of mastering career transitions and coping with times of insecurity alone and need to rely on their own capacities and coping strategies. The economic crisis with its dreadful consequences for many individuals has also brought newly into question the preparedness in terms of skills and competences for current and future job markets (Cedefop 2012a). While these can be relatively well defined when it comes to basic skills or job specific skills other competences are still largely neglected, such as coping with a situation of risk

and uncertainty and building resilience. Approaching a new career requires self-efficacy, agency, motivation and the ability for self-construction. Agency and self-efficacy both refer to the process of adaptation to change under the condition that the individual acts intentionally, with forethought, is self-reactive and reflective (Bandura 2001, 2006). Constructing ones identity refers to individuals need to adapt and dispose many alternative behaviours, even if this could mean to fully reskill in order to achieve more radical changes in life (Giddens 1991; Tomassini 2015).

Once a new career has entered the change is often accompanied by identity shifts (Ecclestone 2009). Individuals start to reflect upon the lessons they have learned in different life situations and life stages, how it shaped their behaviour and their identities and new roles (Levinson 1996; Merriam 2005). Identity feeds itself on aspects such as autonomy, subjectivity, responsibility and choices, which overall when acting out reinforce the process of individualization (Beck and Beck-Gernsheim 2002; Cedefop 2014b). Many career transitions demand and promote frequent identity reshaping and steer the process of becoming (Bauman 2002). For some individuals the regular bouncing between career trials and the shaping and reshaping of ones' identity can be a heavily disturbing process. Constructing ones identity is accompanied by conditions of trust (e.g. built within families) that provide a sense of security and, at the opposite extreme, by conditions of risk, which refers to unexpected or unintended outcomes of ones actions (Cedefop 2014b; Tomassini and Zanazzi 2014). Identity construction is also very much influenced by social-structural conditions determined for example by teachers, representatives of public institutions, career counsellors that influence or mediate the relationship of the individuals and its surrounding world. When creating a narrative about ones' life the individual attaches meaning to the experiences one had with these institutions and ones' own reactions. Competencies that are further developed through the reflexive process of identity development include cognitive competencies, such as systems thinking and pattern recognition, emotional intelligence, including self-awareness and self-management and social competence, including empathy and teamwork (Cedefop 2014b). The extent to which individuals can draw on these competencies determines somewhat the success of their career transitions and even life satisfaction.

3 Lifelong Learning Policy, Career Support and the European Welfare State

A societal shift towards highly individualized career pathways and the changes that individuals go through along with that (Hall 2004) forces individuals to constantly reinvent themselves (Beck 1986; Heinz 2003a, b) and regularly engage in further learning. This entails that individuals need to balance their various life spheres (family, work, leisure) with the commitment to learn (Riley et al. 1994). Not engaging in further learning over several years, which is for example required in order to upgrade ones job specific skills bears various risks, such as decline of performance

at the job, difficulties in adjusting to new workplace requirements or finding a new job (Brown et al. 2010). Regularly engaging in learning processes can to some extent protect the individual from such risks. In this context it is important for the individual to understand how and where learning takes place. Especially informal learning in the form of peer learning that might lead to changing values, attitudes or behaviour might already prepare for a next career step (Barabasch et al. 2014). Autonomous work, in many cases also in the context of collaborative work, supports the development of self-management competences (Winterton et al. 2006).

Bimrose et al. (2011) emphasize that learning while working is particularly supportive and necessary to master practical, cognitive and communicative demands at the workplace. The accumulation of job experience alone might not be a sufficient preparation for it, but under the condition of increasing demands within allocated work tasks the individual is constantly challenged which encourages learning processes (Cedefop 2012b). More challenging tasks in combination with the development of trustful relationships at work supports individuals development as autonomous and reflexive learners (Dehmel 2015; Hüther 2004). Other ways of learning at the workplace include teaching others, taking over more responsibilities and by being exposed to varying work contexts (Cedefop 2014a), for example through job rotation. Structural conditions that hinder adults from reengaging in education include lack of funding, time, or repetitive work with little responsibility for extended time periods.

Mid-career workers can be supported in their skills and personal development through continuing adult education and training (CVET) in various ways. Formal training is of course the most conventional used approach, but not particularly feasible for smaller enterprises where time constraints in many cases prevents adults to participate. Online or evening classes can ease access to and participation in formal learning. Informal learning vice versa is taking place in so many different ways that for the large majority of enterprises a higher consciousness about the effects of more empowering leadership styles, a culture of respect in communication at the workplace, team work approaches, job rotation, regular career development interviews or mentoring among other measures can be implemented more easily (Eraut 2009; Gazier and Gautié 2009; Larsen 2005; Schmid 1995). A strong alignment between formal education and workplace realities and needs also supports the learning process. Overall, a clear framework approach within workplaces towards the facilitation of learning will benefit both, the employer in his interest to increase productivity as well as the employee in terms of ones' employability and job satisfaction.

4 Structural Support for Career Transitions

Labour market imbalances have put a considerable amount of strain on individuals that have perpetuated changes in family situations. When a family is faced with an illness or other distressing events individuals need to be able to utilize resources available to them. For some these are family members or peers and generally

established networks which are particularly relevant when other support structures provided by the state are missing. Brown et al. (2012) emphasize the high relevance of opportunity structures in the life course and refer to the structured pathways that societies often predetermine for individuals, for example in the German case with an early selection of students for three different types of school. The individual needs to navigate within given structural conditions which requires agency to overcome constraints within these framework. Based on the two Cedefop studies on career transitions information have been collected about public support structures. While countries, such as Denmark and France stand out with a variety of support measures, in countries such as Italy and Spain individuals did not address seeking any kind of state support for the management of their career transitions. The latter indicates that *“trust in state support is largely absent, but also that expectations in this respect have gradually disappeared”* (Barabasch et al. 2015).

The Danish welfare state, which represents the Scandinavian’ model or social democratic model of a welfare state (Esping-Andersen 1990), is characterized by strong cooperation and negotiation between the state, unions and employers about wage and labour market conditions (Due et al. 1993). One of the prominent signifiers of the Danish welfare state is its flexicurity system which exists since 2009 and has been implemented to support career transitions within and across enterprises. Financial support provided to bridge time between employment and reengage in education is connected to incentives that are meant to activate adults relatively fast for new jobs (Bredgaard et al. 2009; Cort and Thomsen 2014; Knudsen and Lind 2012). For labour market transitions the flexicurity model was built on three pillars: low job security (benefiting employers), high compensation levels during periods of unemployment (benefiting employees) and an extensive system of activation policies and possibilities of adult education, i.e. re- and upskilling (benefiting both employers and employees) (Cort and Thomsen 2014). The system is considered to be supportive of career transitions, which are undertaken by approximately 25 % of the workforce each year (Cort and Thomsen 2014).

Danish wage earners have on average had more jobs in the course of their working lives than their counterparts in every other EU country. (Voss et al. 2009, p. 13)

However, the Danish flexicurity system was increasingly criticized for being too expensive and inefficient accompanied by a too generous unemployment insurance scheme (Bredgaard et al. 2009) and has responded with a shift of funding schemes, which included that fees for job retraining programmes were increased and conditions for eligibility for unemployment insurance benefits were changed (Madsen 2011). Cort and Thomsen (2014) and Wilthagen and Tros (2004) however argue that the current system defeats its original purpose partially, because it focuses too strongly on rapid labour market integration and insufficiently on education, training and ‘gainful non-market activities’.

The French conservative welfare state (Esping-Andersen 1990), also characterized as Bismarckian system is based on strong negotiation between various stakeholders, while at the same time the state takes a prominent interest in providing social security for its citizens. Detailed information on the French welfare provision

in regard to support of career transitions are provided by Mulvey (2014). According to her French citizens clearly benefit from support structures and the provision made by the state which ensures that an employee has time and space for lifelong learning (Ministère du travail, de l'emploi, de la formation professionnelle et du dialogue sociale 2014). Taking paid leave (congé individuel de formation (CIF)), a system funded by employers, has been first introduced in 1971 and later extended towards individuals who are coming to an end of their contract and adults under the age of 30. The entitlement provides for 20 hours of paid leave for training in any given year which may be rolled forward for a period of up to six years, making a total of 120 hours (Ministère du travail, de l'emploi, de la formation professionnelle et du dialogue sociale 2014).

The state signals in this way that beyond required training for keeping ones employability the emphasis is on individuals' preference and choice of self-development. The bilan de compétence supports the process of having skills acquired in various ways formally recognized to support career re-orientation (Mulvey 2014; Bimrose et al. 2015). Additionally, France offers its citizens paid leave for preparing the skills audit (bilan de compétences) or the validation of their experiential learning through the validation des expériences aquis (VAE). In 2009 individual rights were extended towards entitlements for individual career guidance above the provision of the public employment services (PES) through the Pôle d'emploi. Overall, the French state puts heavy emphasis on the transferability and portability of individual training portfolios across occupational sectors or geographical regions (Mulvey 2014).

Mulvey (2014, p. 331) further explains that the CIF relies on

three governing principles: free choice (on the part of the individual worker); equal choice (irrespective of whether the employment contract is full or part-time, permanent or fixed term, or indeed temporary) and autonomous funding (the employee afforded the freedom to determine how the available funds should be spent). (Mulvey 2014, p. 331)

Employers have to agree to training leave and acceptance rates are high: acceptance ranges from 70 % of the applications for individual training leave (CIF) to 98 % acceptance of applications for skills assessment leave (Cedefop 2008a).

The French system sticks out in terms of the large number of entitlements and state wide support structures. The interviews conducted in France indicated that individuals are well aware about the support mechanisms and entitlements. Nevertheless, not always is access to these resources as easy as it seems and individuals in need sometimes do not have the capacities to draw on them or experience rejection in the face of intended career reorientations when consulting with public authorities.

Italy and Spain are countries with a much less developed welfare state, characterized by Esping-Andersen (1990) as conservative welfare states (welfare provision only for the elites), by Leibfried and Pierson (1992) as 'rudimentary welfare state' and by León and Migliavacca (2013) as familistic welfare states, recognizing the strong ties and support given within families. In Italy welfare measures are primarily supporting individuals in continuous fulltime work and mostly excludes labour

market entrants (Barbieri and Scherer 2009). All these categories refer to the rather small support provided by the state for its citizens in regard to enabling labour market mobility which requires the need to substitute with private relations and networking. The structural constraints at various levels make it difficult for adults to navigate their career transitions. Individuals interviewed for the Cedefop study (2014a) claimed that the educational system did not prepare them adequately for labour market needs or the challenges of career transitions. Since professional guidance and counselling service is not sufficiently available individuals turn to families and peers for advice although most often this is not sufficient. The reliance and dependence on individual networks largely determines the success of finding gainful employment at the labour market (Cedefop 2014a).

The welfare approaches in respect to career transition support in Denmark and France on the one side and Italy and Spain on the other clearly represent contradicting approaches. While France still seems to largely hold on to the idea of individuals' protection from risk and uncertainty by offering state support, Denmark following a similar strategy is comparatively speaking slightly refraining from it, the two Southern European states Italy and Spain on the other side take an approach in which the individual is mostly left to fend for oneself, which requires strong family ties and sophisticated networking skills. These structural conditions effect the ways in which individuals approach planning in life, the development of their navigation skills including trust and planfulness, as much as social interrelationships. While existing entitlements raise expectations towards their accessibility and quality, their non-existence on the other hand is not questioned but leads to more disorientation and increases the risk of 'getting lost in transitions'.

5 Identity Development and Support Structures for Career Orientation

Three stories from the two Cedefop studies are depicted to illustrate the interrelationship between personal capacities and structural support. The three individuals live in Denmark, France and Spain and approached various career transitions in their lives drawing on public and private support structures. What strongly differentiates them besides the contextual background of particular life circumstances and different structural conditions to draw from in their respective countries are their individual capacities to cope with transitions in their lives.

5.1 Beaten at the Finishing Line – Floundering between the Passion for Journalism and the Need to Make Ends Meet

Erik (male, 35 years old) in Denmark finished regular school without sticking out as a problematic student. Vocational school, however, became a setback for him because he did not appreciate what he learned and instead started working part-time in an amusement park, which after dropping out of school became full-time employment. Six years later he took classes in journalism and worked in warehouses. When he was eventually fired PES offered coaching sessions. This helped him in developing a career orientation in life:

(She, the counsellor) listened and asked questions about how and why. I had a chance of airing, how can I put it, my frustrations. Another way of discussing it than with family and friends and the like. It was a completely different way of approaching the problem. And then, well, we talked about education, because it has been lying underneath and sort of been a pressure, that I want to complete an education program. So we found out that I need to take a higher preparatory examination. That's the way forward.

Four coaching sessions over a period of two months helped Erik to understand better where his passion lies and how he can pursue his underlying career goal, which is journalism. The questions of how to make ends meet when financing a family and studying had also been discussed during the coaching sessions and seemed not to appear as a threat at the time. In Erik's case the public support structure offered personalized guidance at a time when floundering between jobs suddenly ended in unemployment and Erik had no clear career pathway or adequate qualifications to rely on. However, he was keen to reengage in further education and mainly needed help in reflecting upon the possibilities to gain access to it. The coaching session helped him somewhat to reassess priorities in his life.

At the time of the second interview Erik had not achieved to enter a journalism program. His story illustrates the difficulties one can phase in pursuing a career even when there is a clear idea of an identity. The discrepancy between aspirations and achievements causes a barrier and prevents Erik from being more persistent in his approach – a phenomenon that was found among a number of so called low-skilled adults. Unclear career goals earlier in life, no career orientation provided by the school or parents, the confrontation with failure or lack of passion for learning in a training program and the easiness with which low-skill employment was found, prevented Erik from sitting back and reflecting more critically upon his career pathway earlier in life. Having access to coaching does not suddenly lead into a strategic career plan, but helped in this case to resort life priorities and take initiative for a new step in life, closer to his passion.

5.2 *There Is No Finishing Line – Pursuing Ones’ Occupational Dream*

Nicole (female, mid-40s) from France works as a health care assistant. She was originally trained as a hairdresser, then worked in fashion sales, which was a career pathways very much projected by her family. After taking on a variety of different jobs, mostly as sales manager, over many years, she eventually was involved in a toy store business that needed to be closed. A phase of unemployment lasting about a year was used to take several training courses and Nicole participated in competitive exams to enter jobs as a healthcare auxiliary/assistant. During this period she benefited largely from state support, which paid for preparatory classes and provided her with a sufficient compensation pay for the loss of salary. Although not passing an exam for accessing the profession as nurse assistant (Contrat d’Accompagnement à l’Emploi) she found a temporary employment in a hospital. Her contract was negotiated between her, the employment agency and one of the main hospitals in her region for six months, renewable over two years. In terms of this contract, the payment of her salary as on-the-job-trainee was shared by both the hospital and the employment agency. In June 2006, she was confirmed in the job as health assistant (agent hospitalier) through recruitment on the basis of a permanent work contract according to the employment status of civil servant within this hospital.

Public support will again be relevant for Nicole when approaching her next career step. She plans to continue her preparation for obtaining the State diploma of assistant-nurse (Diplôme D’Etat d’Aide-Soignante (DEAS)) through the use of the VAE in order to have the formal qualification for what she is doing already and being able to be professionally mobile internationally. If she succeeds in a competitive entrance exam to the DEAS (assistant nursing State diploma) programme, she will complete the related 10-month-programme by applying for a paid professional training leave (Congé de Formation Professionnelle (CFP)) alternatively called in healthcare a professional promotion leave (Promotion Professionnelle). It is equivalent to CIF scheme used in the private sector, and it is accessible after accumulating three years of working experience. Its maximum duration is 12 months, during which she will receive 85 % of her salary and all training related costs will be covered by her employer.

Overall Nicole disposes over a set of characteristic that are essential for career adaptability. She is self-reflective about her needs and passions in respect to working life, resourceful in finding out about the necessary requirements to achieve her goals, persistent in gaining access to the necessary further education and finding financing support, planfull in setting up the steps in order to achieve her goal and highly motivated. Just like many other individuals in the French data set, Nicole is very aware about the entitlements offered by the state and the ways in which she can draw on them. In her case a positive relationship between personal development and structural support reinforces her career success.

5.3 Experimenting with the Finishing Line – Relying on Enthusiasm and Social Support

In Spain and Italy many participants reported that the support of their families and sometimes friends was essential for mastering their career decisions. In some cases this support was related to financial support because a family would have to rely on one income only or even on their parents funding. Familial support was predominantly emotional in nature and naturally sought after. An example for this is Belen (female, 35 years old) from Spain who pursued a degree and career in journalism after finishing high school. Many job changes, leading to about eight different media companies in her case, are typical for this profession, sometimes related to new interests, but also stress and underpayment. Being overworked she decided to join a layoff program and used the time of paid unemployment to study English and social media. Soon she found a new job as a substitution in the communication department of a gas company and continued her studies part-time. Seeking a better work-life balance made her quit this job and taking on a part-time job, also working with social media.

Belen points out how important the support of her family has been throughout these career changes and especially when leaving the journalistic field and entering into social media:

It is very important to know how to make that step when you're sure to make it even though your environment isn't, doesn't support you very much (economic crisis). And then it is also important to know that the people that are close to you support you, this helps very much.

In her interview Belen mentions unemployment benefits that enabled her to engage in retraining, but no other state support measures. The social support seems to contribute to her strength and enthusiasm for many career changes. Besides a high degree of career adaptability, agency and self-efficacy she feels that her investigative attitude, related to a curious mentality helped her as much as her open-mindedness paired with a positive attitude concerning learning and work.

6 Conclusion

Career transitions are not always planned nor can be foreseen at a particular stage in life. The preparation for career transitions therefore needs to start early and support the development of a career consciousness. Bimrose and Brown (2014) point out that having access to career counsellors when individuals see themselves in a process of transition is particularly relevant. Based on the stories revealed in the interviews within the Cedefop study, such access to support would have saved various pathway irritations and failed investments. The more generous welfare support provided for career transitions in Denmark and France eased individuals stress towards managing transitions and provided them somewhat with the security necessary to

experiment by reengaging in learning and trying out new jobs. At the same time, even if less state support is provided individuals in the South tend to rely on their own capacities and resources and seek emotional support of family and friends while approaching career decisions. All three stories in this chapter portrait individuals, who followed a vocational calling or pursued a professional passion with different success rates. At the various crossroads in their lives they mostly relied on their very own resources and made decision often under the condition of uncertainty.

Coaches or career counsellors can be very helpful in such situations, but often only step in when a person is unemployed. In order to prevent dead-end roads in individual's career pathways with its negative outcomes (unemployment, stress or depression) and failed investments policy needs to respond to the increasing need for individualized career guidance and counselling for mid-career adults. The preparation for career decisions and career transitions, however, needs to start much earlier in life and should become a compulsory component in school curricula.

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Chapter 3

Challenges to the Implementation of Dual Apprenticeships in OECD Countries: A Literature Review

Oscar Valiente and Rosario Scandurra

Abstract The good economic performance and low levels of youth unemployment in countries with dual vocational education and training (VET) systems have provided good arguments to the advocates of dual apprenticeships as a global role model. Many governments in the Global North have started to show great interest in adopting dual apprenticeships in their own national contexts with the aim of improving the employability of young adults and smoothening transitions from education to work. However, evaluation studies have demonstrated that the transfer of these international good practices to different local contexts is quite problematic, making necessary to understand how different designs of dual apprenticeship programmes interact with the social and economic contexts in which they are implemented, and how social actors react to these interventions. This literature review has systematised international evidence on some of the challenges and dilemmas that governments in OECD countries face when they want to implement large-scale dual apprenticeship programmes. We suggest that the main challenge they face is to make dual apprenticeships attractive to both employers and students. We conclude that the difficulty of reconciling these two goals is one of the main reasons for most of these interventions to remain as small-scale innovations and not reaching the systemic level.

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1 Introduction

The global economic crisis and the social problems associated with unemployment, and in particular with youth unemployment, have reinvigorated public debates around the contribution of VET to employability, productivity and economic growth in developed countries. The good economic performance and low levels of youth unemployment in countries with dual VET systems have provided good arguments to the advocates of dual apprenticeships in international debates (Hoeckel and Schwartz 2010). As a result of this, many governments in developed countries have shown great interest in adopting dual apprenticeships in their own national contexts with the aim of improving the employability of young adults and smoothening transitions from education to work (Christopoulou and Ryan 2009). The problem is that the model of dual apprenticeships that has been so successful in countries like Switzerland, Germany or Austria it is not directly transferable to other national contexts due to its social and cultural embeddedness and the complex institutional arrangements required for its effective implementation (Maurer and Gonon 2014).

In 2014, the Jaume Bofill Foundation commissioned this literature review to a research team led by the Robert Owen Centre for Educational Change of the University of Glasgow¹. As many other Southern European countries, by that time Spain had started the adoption of a dual apprenticeship programme that was facing many challenges in its implementation. The aim of this literature review was not to question the adoption of the policy itself in Spain but to interrogate what challenges other developed countries faced when implementing their dual apprenticeships programmes and how they managed to ensure its effective delivery. Specifically, the main objective of this literature review was to systematise evidence on international experiences of dual apprenticeships in different OECD countries (not only those with dual systems) and to provide theoretically informed and policy relevant insights on the challenges and dilemmas that any government would face in the process of implementing and scaling up this kind of interventions at a systemic level.

2 Dual Apprenticeships as a Travelling Policy

A dual apprenticeship is what in international and comparative education has been defined as a ‘travelling policy’ (Ozga and Jones 2006) or a ‘global education policy’ (Verger et al. 2012). These policies have solid historical, political and economic roots in specific countries but they have become global because of the action of international organizations, cooperation agencies, governments in other countries and a wide range of policy entrepreneurs (Halpin and Troyna 1995). In this sense,

¹The research team included: Oscar Valiente (University of Glasgow), Rosario Scandurra (Universitat de Barcelona), Adrian Zancajo (Universitat Autònoma de Barcelona) and Chris Brown (UCL Institute of Education).

these policies are the result of the globalisation of a particular localism. The selection of these local policies by international actors is not a random process and usually there are good reasons for selecting these policies over other alternatives. Promoters of dual apprenticeships have seen several advantages in this model of VET provision. Let's start by clarifying what we mean by dual apprenticeship before we list the advantages that have been associated to them.

Generally speaking, apprenticeships denote programmes of learning that combine part-time formal education with training and experience at the workplace, and result in an externally recognised vocational qualification. The blending of learning of technical knowledge in the classroom and practical skills in the workplace distinguishes apprenticeships from other forms of vocational learning. On the one hand, apprenticeships differ from full-time vocational schooling because such schooling typically lacks any workplace-based component that is more substantial than short spells of work experience. On the other hand, apprenticeships differ from on-the-job training and labour market training programmes that typically lack a classroom-based component.

Not all countries design and implement apprenticeship programmes in the same way. The dual VET systems in Germany, Austria or Switzerland have specific characteristics that make them different from other forms of apprenticeships and these differences could probably explain the great international attention that they have attracted. In dual VET systems there is a strong component of school based education and well organized employers' associations and unions that are actively involved in the assurance of the quality of relevance of in-the-job training (Blossfeld and Stockmann 1998; Ryan 2000). This differs greatly from countries like the UK, where training standards for apprenticeships vary largely by occupation and sector and quite often require little off-the-job learning in the formal vocational education system (Wolter and Ryan 2011; Wolf 2011). These differences oblige us to distinguish between simple forms of apprenticeship, which are subject to a weak regulation by the state and are oriented by a free market ethos; and dual forms of apprenticeships, which are subject to a strict institutional regulation and are oriented by the principles of social partnership between capital, labour and the state. We refer to 'dual apprenticeships' and not to 'dual systems of VET' because we do not want to restrict our analysis to Germanic countries and because international research has shown that dual forms of apprenticeships exist to a greater or lesser extent in many developed countries (Ryan 2000), and in many others there are local policy innovations and national reforms moving in that direction.

Several potential advantages have been identified in dual apprenticeship programmes, particularly when compared to full time school-based VET systems. Firstly, the 'situated learning' that characterizes dual apprenticeships is for some learners both more motivating and easier to undertake than the less situated learning that characterizes classroom-based programmes (Soskice 1994). Secondly, the skills developed by apprentices benefit from the closeness of learning to production. Learners are exposed to both the production methods and the work requirements of actual workplaces rather than to classroom substitutes. And thirdly, dual apprenticeships are associated with smoother school-to-work transitions. Having taken an

apprenticeship seems to have a positive impact in early labour market outcomes because of reasons outlined above and because of the acquisition of superior information and contacts in the labour market (Ryan 2001). For these reasons, it is expected that students enrolled in dual apprenticeship programmes will be more employable than those enrolled in school-based VET. They will develop better practical skills, they will develop skills that are more relevant for the companies in their economic sector, and they will have better knowledge and networks to access a job.

Dual apprenticeships have not escaped criticism even in countries with a long tradition of dual VET provision, but they still maintain a well deserved high level of international recognition for their achievements in making students' transition from school to work as smooth as possible. Furthermore, they are constantly benchmarked as examples of good practice by international organizations when discussing the reform of VET systems internationally (Hoeckel and Schwartz 2010). Attached to the international interest in dual apprenticeships, the German Agency (*Deutsche Gesellschaft für Internationale Zusammenarbeit*² (GIZ)) and the Swiss Agency for Development and Cooperation (SDC) have expended great efforts in transferring the dual VET system to many developing countries. In fact, the export of the dual VET system to developing countries has been the main focus of German vocational and training cooperation for a long time. The failure of most of the international initiatives to export the dual VET system in the 80s and the 90s has led to a shared agreement that this is a model of VET that it is not directly transferable to other countries. Research on this field has shown that cultural and institutional contextual conditions do matter in terms of an effective implementation of dual forms of VET (Barabasch et al. 2009; Maurer and Gonon, 2014; Stockmann 1997, 1999). The engagement of employers in the provision of training, the level of development of the chambers of commerce, the institutional capacity to monitor and evaluate the quality of the training in the workplace, the prestige of vocational studies and ability to reach agreements between social partners are some of the requirements that have been identified for an effective implementation of dual forms of VET.

This recognition has not prevented the increasing international popularity of these programmes and the intense cooperation activity to implement them globally, but there has been a shift in the way cooperation agencies approach the transference of the dual VET system. Instead of trying to directly transfer the dual VET system as a technical solution, most of the efforts are now concentrated in developing dual structures in order to gradually implement elements of the dual VET system in accordance to specific features of the recipient countries. The emphasis on the reform of local institutions and governance structures has created great opportunities for technical cooperation in the development of new legal frameworks in recipient countries. This new scenario also includes new opportunities for peer-to-peer cooperation between international offices of the Swiss and German chambers of commerce and the chambers of commerce in developing countries.

Being aware of these developments, our literature review aims to contribute to the debates on the transferability of dual apprenticeships with some specificity.

²German Society for International Cooperation.

Firstly, we will not question the evidence base for the adoption of dual forms of VET or their effectiveness in the countries where they operate. We will focus just on the challenges and the policy dilemmas that policymakers encounter in the implementation and management of these policies once they have already decided to adopt them. Secondly, we will pay specific attention to the challenges of implementing dual apprenticeships at a large-scale level and not just keeping them as small-scale innovations. Thirdly, given the renewed interest for dual apprenticeships in developed countries in the post-recession scenario, we will limit our review of evidence to OECD countries. We expect that it will be easier to extract lessons for developed countries when we analyse the experience of countries that share some similar contextual conditions. Fourthly, and finally, the review of evidence will include several forms dual apprenticeship programmes and not just those in the well-known dual VET systems (i.e. Switzerland, Germany, Austria). Given the difficulty to directly transfer dual models of VET from one country to another, we think that considering a wider diversity of dual apprenticeship models will be more useful than restricting the analysis to just one paradigmatic model.

3 Theory Driven Literature Review

Overall, the systematic review of literature is defined as research that examines rigorous and transparent evidence produced by secondary sources for solving a problem previously conceptualized. Oakley (2012, p. VII) states that the purpose of a systematic review is to “arrive at a more comprehensive and trustworthy picture of the topic than is possible from individual pieces of research”. For this purpose, Arthur et al. (2012, p. 5) argue that good reviews, conducted in a systematic and transparent way are a valuable tool for aiding policy making, since they provide a ‘short cut’ to the pool of research knowledge in a given area. Simultaneously, however, Oakley argues that systematic reviews can act as a valuable check on how knowledge has been used by the powerful and so bring policy makers to account:

The lives of many people are touched by what policy-makers decide to do to promote health, education and welfare. It is therefore essential that policy decisions and strategies are founded on the best evidence, not only about what works, but about what people want and what they consider to be appropriate. At its heart, systematic reviewing is a tool of democracy. It exposes the policymaking process and the work of professionals and others to the standard of good evidence, and it opens up to public scrutiny the ‘academic’ business of collecting and analysing research. (Oakley 2012, pp. VII–VIII)

Systematic reviews are, as Moss (2013) contends, as much a research tool to support democratic political dialogue as they are an aid for more effective policy-making. The questions that guided our systematic review of the literature were: *What policy-makers in OECD countries need to know if they decide to implement a dual apprenticeship program? What kind of challenges and dilemmas they will have to face?* In order to answer these research questions, we positioned our approach more towards the theory driven end of the systematic review methodological spectrum. The aim

of the review was to provide theoretically informed and policy relevant insights on the challenges and dilemmas that any government would face in the process of implementing dual apprenticeship programmes. We focused on collecting insights around governance elements involved in the implementation of these programmes. Those elements are inserted in contextual and institutional characteristics and are based on endogenous experience of every single country. Rather than factors that can be evaluate independently, our question deal with a broader and theoretical level. For this reason we centre our attention on a wide range of literature instead of focusing on evaluation studies that are more targeted to specific aspects of the policy. In other words, our literature review was more conceptual than aggregative (Sandelowski et al. 2012; Gough et al. 2012).

The scope of our literature review was limited to studies on VET within OECD countries published in English after 2000. We initially searched in two ways. Firstly, carried out a Boolean search in four relevant education and social sciences databases³ combining a list of search terms from different thematic blocks: apprenticeships (dual training, dual system, work-based training, etc.), skills (capability, competence, employability, etc.), labour (employment, wage, earning, recruitment, etc.), education level (secondary, high school, college, higher education, etc.) and countries (list of OECD countries). Secondly, recommendations on seminal literature were also sought from and provided by experts and colleagues in the field. The references cited by the authors of these studies were also scanned through a snowballing strategy. Search combination gave the result of 132 studies. Through applying exclusion criteria and assess the quality of studies extracted we end up with 32 studies. We excluded papers that did not focused on the VET system, that covered countries outside the OECD area, and papers that analysed apprenticeship programmes that could not be considered as 'dual'. In addition four studies were added following the recommendations from experts in the field. This approach to sourcing literature, combined with the screening criteria and approaches to quality control, resulted in a total of 36 papers, studies, reports and books being reviewed (the list of references reviewed are available in the appendix). Data from the papers, studies and reports were then 'extracted' using a data extraction form; this enabled us to capture data on salient conceptual and theoretical fields, which was then used to develop our subsequent conceptual and theoretical frameworks.

Following the process of data extraction we analysed our data in the following way. Firstly we applied a deductive theoretical approach: specifically, we had already conceived a theory of change based on the notion of realist synthesis (Pawson 2001; Pawson and Tilley 1997), which seeks to explain and evaluate the barriers and drivers that underpin successful social interventions. We also combined this realist approach with the notion of the 'logic model', which argues that change can be determined through the identification of linear causality – from the inputs of an intervention through to intermediary and then final outcomes through social mechanisms. In the line with our deductive approach, we then undertook a more

³These were: Applied Social Sciences Index and Abstracts (ASSIA); International Bibliography of the Social Sciences (IBSS); Science Direct (Social Sciences); Scopus (Social Sciences)

inductive or grounded perspective to analysing the data collected in the extraction forms (Strauss 1987). In particular, we attempted to ascertain the themes and categories which emerged from the data and then: (i) examine the relationships that existed between these categories; (ii) to develop these into conceptual hierarchies with both horizontal and vertical theoretical linkages (i.e. linkages within and between hierarchies); and finally (iii) ascertain how these might relate and augment our understanding of the various stages of the theory of change including the contextual factors. In its aggregative state our analysis of the data should also be taken to represent a range of policy-options that might be explored by policy-makers as they progress along a theory of change allied to the contextual considerations that need to be taken into account when considering which options might work best.

The literature review covered a wide range of references in terms of research design and national contexts. Most of the references had a theoretical focus (15), some of them were evaluations (seven), some were quantitative (five), others qualitative (four), other studies were mixed method (four) and only one study was a literature review. Some of the studies were comparative or multi-country studies (seven), and the country with more studies was the UK (nine), followed by Switzerland and Germany (four each), then the US and Canada (two each), and we only reviewed one study for each of these countries: Norway, Netherlands, Italy, Ireland, Finland, Denmark, Austria and Australia. Several methodological limitations can be identified in our review of the literature. Firstly, we only covered literature written in English; therefore we did not review any evidence from the literature written for example in German, which has a long tradition of VET research. Secondly, our approach relied probably too much on the academic literature available in scientific databases because we did not significantly research 'grey' literature and the manual searching of journals and textbooks was reduced in scope. Thirdly, it was difficult to determine when a policy could be considered as a dual apprenticeship programme. We tried to follow Ryan (2000) in his definition of modern apprenticeships⁴ but sometimes, even after reading the full paper; it was difficult to determine the nature of the apprenticeship programmes under analysis. In the cases of dispute, we privileged country diversity in our sample of studies.

⁴Ryan (2001) defines modern apprenticeships and provides a list of institutional requirements to be considered so: (1) the VET programme is divided into two components: one school-based and the other in the workplace; (2) it is a programme of initial VET that leads to the acquisition of a formal qualification; (3) qualification levels within the European context are equivalent to upper secondary or tertiary education; (4) the programme includes compensation in the form of a salary/benefit to the learner; (5) the direct costs of training apprentices in the workplace are sponsored by the employer; (6) there is a formal contract or relationship between the learner and the employer that protects both parties; (7) activity in the workplace is mainly aimed at training the apprentice; (8) there are actors within the company with the responsibility of defining training programmes, tutoring and/or evaluation.

4 Making Dual Apprenticeships Attractive to Employers

It is generally assumed that companies' and employers' motivation to get involved in dual apprenticeships depends mainly on the individual assessment in terms of cost-benefit analysis (Juul and Jørgensen 2011; Smith et al. 2011). Under this assumption, employers will be involved in dual apprenticeships only if the cost of the apprentice is lower than its productivity during the period in the company, or/and the investment in its training and selection compensates for the additional cost of selecting the most able and well-trained candidates directly from the labour market. Dual apprenticeships offer employers the opportunity to gather more information about the capabilities of potential employees and screen the best candidates for the job (Askilden and Nilsen 2005). Dual apprenticeships seem to work as a signalling channel that displays the capabilities of learners in the workplace, so that employers can acquire sensible information about the potential future performance of employees. Acemoglu and Pischke (1998) point out that a key factor for participation in dual apprenticeships is the possibility for the selection and recruitment of learners. In countries with a dual VET system, employers are more likely to select the best candidate for a future job and pay wages below the productivity of individual learners. The economic literature indicates that this process occurs only in the presence of some institutional factors that contribute to its effectiveness, such as the involvement of committees in monitoring the learning contracts and labour regulations that discourage labour turnover (Acemoglu and Pischke 1998). In addition, these countries have been historically characterized by high employment stability, low wage flexibility and strong occupational safety (ILO 2012; Estevez-Abe et al. 2001; Busemeyer 2009). However, this cost-benefit analysis is not the only element that needs to be taken into account to understand the motivation of employers. This analysis is affected by the intrinsic conditions of the firm (size, production sector, type of production environment), the economic cycle of expansion or recession, the incentives put in place by the state and other social arrangements and institutional considerations.

Small and medium enterprises (SMEs) have features (e.g. a lack of economies of scale, lack of organizational capacity, specificity of economic activity and the diversification of tasks to be developed), which might make their participation in dual apprenticeships more difficult. In dual VET systems, the participation of SMEs is very significant because it is eased by the institutional support provided by the chambers of commerce. These institutions create their own training centres that complement the training that takes place in the workplace in SMEs. In these cases, the establishment of institutional mechanisms and cooperation allow SMEs to operate as a network in order to have access to planning and the provision of training in the workplace, which large companies are sometimes more likely to do by themselves. Firm size can also be an impediment when policymakers try to establish a dialogue to reform or change their VET system. In Anglo-Saxon countries (Ryan et al. 2006), all attempts to involve employers in the management of VET have only been able to attract large employers. Small firms have been systematically uninvolved

in training in the English context (Fuller and Unwin 2003). In England, the industrialization of the country and the prevalence of the service sector have also hindered the development of dual apprenticeships (Hogarth et al. 2012).

Dual apprenticeships are more attractive to employers in periods of economic growth and labour shortage (Brunello 2009; Askilden and Nilsen 2005). Some of the evidence reviewed suggests that the number of learners tends to fall more rapidly during periods of recession (Brunello 2009). Employers adjust their own needs to increase competitiveness in the short term and to minimize training costs. Moreover, in periods of economic recession and high unemployment, the manufacturing sector tends to hire higher educated apprentices (OECD 2010), thereby worsening the job opportunities of learners with lower or no qualifications (Behrens et al. 2008). Young people respond to reduced training and career opportunities by staying in school longer in order to get higher qualifications and gain access to higher education. Bassanini and Brunello (2008) pointed out that training policies are not necessarily the only tools available and are perhaps not the best for supporting training in a phase of prolonged recession. Askilden and Nilsen (2005) arrived to similar conclusions for the Norwegian case, where employers' demand for apprentices seemed to be very affected by the economic cycle. This pattern may be due to the demand for labour, but will also be compatible with the hypothesis of long-term investment.

State intervention plays also a decisive role when it comes to mitigating the cost of training for employers. Under dual apprenticeship schemes the cost of training is shared between employers and the state (Walden and Troltsch 2011). Historically, state intervention has been decisive in the presence of negative economic cycles, which produced a sharp decline in the supply of training opportunities (Juil and Jørgensen 2011). In Germany, the state has funded the cost of work-based training during economic stagnation, contributing to the maintenance of the dual model. Thus, the objective of these strategies is to maintain an economic and social model, which represents the joint efforts of the state, employers and trade unions, and that relies heavily in the formation and utilisation of medium-low and medium-high skilled workers by the industry (Culpepper and Thelen 2008; Heinz 2000; Culpepper 2007). Moreover, state intervention may be enhanced to meet the needs of certain strategic sectors (Twigg 2012; D'Agostino et al. 2010). This is a government proactive move to prevent long-term structural problems, seeking to enhance the competitiveness of its industry and/or mitigating the shortage of skills in the market in the long term (Lehmann 2000; O'Connor 2006; Vickerstaff 2007).

Employer's involvement in dual apprenticeships is also affected by the social arrangements with trade unions. This element varies considerably and depends on many factors such as the structure of the economic system, the organization and institutionalization of trade union bodies, institutional culture and the history of relations between employers and employees, as well as the level of recognition of these entities. An example of the importance of trade union participation is the Irish model of dual apprenticeships, which attempted to implement an "institutional development system" (Ryan et al. 2006). The lack of cooperation among unions has been the primary reason for the failure of former reform attempts in Ireland

(O'Connor 2006). In Denmark, employers and union representatives sit on the boards of directors of professional schools (Bosch and Charest 2008; Juul and Jørgensen 2011). In the Netherlands, a central board of social partners works with representatives of vocational schools to develop qualifications and curriculum-linked training (Brockmann et al. 2010; ILO 2012). In these countries, the unions are engaged in developing the vocational training system, which makes them co-responsible for the implementation and sustainability of the model. In countries with dual VET systems, the dialogue between employers, unions and the government it has been formalised through different institutions at the federal, state and regional levels, with the aim of ensuring that all the interests are represented in the governance of the system. This feature is present in all countries with a dual tradition, but not only in these countries. The participation of social partners within the company has direct effects on the degree of legitimacy and acceptance of dual apprenticeships (Abdel-Wahab 2012). The collective representation of employers, unions and professional organizations and the social arrangements are key aspects to explain the success of dual apprenticeships in many of these countries (Kammermann et al. 2011).

Finally, it has to be said that the involvement of employers also depends on their own engagement with the social goals of VET and their trust in the sustainability of the apprenticeship system. Employers need to be convinced that the apprenticeship system is a solid endeavour with a significant impact on the economy and society. Otherwise, they will see their involvement in the initiative as an unnecessary risk for their company. Dual VET systems have been developed thanks to the strong involvement of stakeholders but also thanks to the determined and sustainable action of the state, that has developed together with other stakeholders a solid legal framework and governance mechanisms. The government should play a coordinating role and act as a “facilitator and regulator” of apprenticeship schemes in order to ensure their sustainability. This involves ensuring dialogue and making the benefits of such an alliance tangible (Smith and Betts 2000). In some countries, e.g. England, France and Italy, governments offer employers the possibility of participating in the governing bodies of VET; however, this does not always imply a real and effective stakeholder participation in the management of the system (ILO 2012). The relationship between social actors reinforces the path dependency of countries, providing a system of collective decision-making and ensuring VET coordination as part of active labour market policies (Flude and Sieminski 1999; Soskice 1994; Heinz 2000). This allows for equilibrium between the provision of training opportunities and unions' acceptance of relatively low wages for apprentices (Steedman 2010). In addition, the sustainability of dual apprenticeships and their results depend heavily on the political interests of trade associations and their relative power to influence political agendas.

5 Making Dual Apprenticeships Attractive to Students

It is generally assumed that students in dual apprenticeships choose these studies because they want to earn a wage while they study and because they want a smooth and rapid transition into the labour market once they finish their studies (Hall and Soskice 2001; Green et al. 2006; Bol and Werfhorst 2013). This can be true for certain students' profiles, but not for all of them. Dual apprenticeships must meet certain conditions if they want to attract a large number of students with very different profiles. Some of these conditions include the right balance of generic and specific skills in the curriculum and effective regulatory and evaluation mechanisms that ensure the high quality of the training in the workplace.

The tension between general and specific skills is one of the key elements to constructing a quality dual apprenticeship. In terms of labour market insertion, companies require an optimal combination of general and specific skills. More and more the labour market demands a workforce with sound general skills, such as the ability to work in teams or the ability to learn, rather than just a series of specific tasks to be performed following pre-established processes (Heinz 2000). With this new focus on general skills, preference is given to the combination of different knowledge and skills in specific contexts, rather than for the intrinsic specificity of a particular knowledge. An example of these changes on the VET system is modularization. The definition of a professional profile is not well established by a sequential and unambiguous curriculum; rather, it is the result of selection and the individualization of learning, which leads to the ability to use these skills in a variety of fields (Pilz 2012). The adaptation of the VET curriculum to face the demands of a changing market is very important for assessing the effectiveness of dual apprenticeships. Dual apprenticeships schemes should place a strong emphasis on the development of these generic skills if they want to prepare their students for the new demands of today's labour markets.

Generic skills are very important for certain students' profiles not only because they give them the opportunity to find jobs in very different companies and occupations, but also because they give students the possibility of continuing their education at a higher level, either at the finalisation of their apprenticeship or at a later stage of their life. When policymakers suggest that dual apprenticeships can be a good way to improve the attractiveness and social prestige of VET, usually they have in mind a particular student social profile. This potential dual student is characterized by low educational expectations, a certain risk aversion associated with educational investment, low confidence and likely poor results in earlier stages of education. A dual apprenticeship policy that seeks to meet this target population will mainly focus on ensuring a good match between students' capabilities and companies' needs, and will place more emphasis on developing the specific skills that the student needs to get a job in this sector. On the other hand, if policymakers want to attract students to the VET route who might otherwise choose the academic route, then the dual apprenticeship programme will need to have additional characteristics. Most of the students that typically pursue academic routes likely come

from higher social backgrounds, are less risk averse and have higher educational expectations. To attract these students to VET, dual apprenticeships need to provide training at the higher standards of quality, a training that meets the demands from the most competitive companies in the sector, but also a training that meets the requirements from the education system to continue studies at a higher level. Giving access to higher levels of education depends on the academic barriers that VET students face in certain countries, and also depends on the emphasis placed by the VET curriculum in developing these generic and core cognitive skills. Without these skills, young apprentices will not be able to succeed in their higher education studies.

One of the main challenges for dual apprenticeships is transforming the workplace into a space for high quality training. A tension exists between the idea of learning designed as a generic and transferable component (Guile and Okumoto 2007) and the idea of the workplace as the best context for learning how to apply these knowledge and skills (Collins and Evans 2007; Flyvbjerg 2001; Juul and Jørgensen 2011). Acquiring 'deep' tacit knowledge requires apprentices to be actually integrated within the social group that shares this experience and have that specific knowledge. The possibility for apprentices to be inserted into a work-based environment not only gives them the opportunity to acquire knowledge and socialize within the workplace, but also provides an advantage by establishing a set of social/professional ties. This provides apprentices with a kind of meta-knowledge of how the labour market works and serves as a contextual complement to their enhanced human capital (Burt et al. 2001; Granovetter 1995). Dual apprenticeships not only act as a means for acquiring regulated and standardized professional qualifications (Fuller and Unwin 2003; Onstenk and Blokhuis 2007), but also provide a period of socialization and personality development for young adults (Heinz 2002, 2000; Walden and Troltsch 2011). Apprentices are more likely to incorporate work values by being part of a larger group of peers (Hogarth et al. 2012) and by experiencing real labour relations. As part of this experience, dual apprenticeships must offer some legal protection to the learner and the employer in a form of a contract. This contract should determine rights and obligations from both parties, the duration of the apprenticeship, the learning programme, the methods of assessment and the certification process (ILO 2012). The contract has great symbolic value for the apprentice because it regulates the working conditions and the training received in the workplace (OECD 2010). Joining the labour market is not only about getting a job and receiving a pay, it is about becoming a member of a functional community of labour relations and a specific work culture (Heinz 2000; Vickerstaff 2007; Taylor and Freeman 2011). Making dual apprenticeships attractive to students also means providing the conditions for a successful integration into this set of regulated social relations.

The quality of the training in the workplace cannot be guaranteed just by a contract, other resources, regulations and evaluation mechanisms are also necessary. The availability of experienced and well-trained trainers and mentors in the workplace is one of these prerequisites (Filliettaz 2011; Rökköläinen and Työssäoppimisen 2001; Tynjälä 2005; Tynjälä et al. 2003). Trainers, in cooperation with schoolteachers, are responsible for the integration of the learning in the workplace into the whole

educational experience. This integration can be promoted using different pedagogical tools such as individualised learning plans, educational projects, learning diaries, portfolios and learning groups (Virtanen and Tynjälä 2008). In addition to the availability of well-trained trainers, companies must offer adequate spaces and facilities for the training of the apprentices. This infrastructure is not always available in companies; therefore an external body has to be responsible for the inspection of the training environment in the workplace. The evaluation and monitoring of dual apprenticeships is a key element to guarantee the quality of the learning. In most of the countries the evaluation and monitoring responsibilities are exercised mainly by the state, but responsibilities are quite often shared with other social partners. In some cases, the department responsible for the evaluation of apprenticeships is Department for Education (Germany, Denmark and the Netherlands); while in others, it is the Department of Finance (Austria) or the Department of Labour (Ireland). These departments can exercise direct control of the system (Austria, Netherlands) or may delegate authority to a specific body responsible for the apprenticeships (Denmark, Ireland and Germany), as is the case for the German Federal Institute for Vocational Training (BIBB). Dual apprenticeships can be regulated either by national or regional institutions and the task of defining the content and the methods of training usually are shared between different actors. In Germany, chambers of commerce have a leading role in determining the training standards for specific occupations and they authorize and oversee the conditions of companies offering apprenticeships. Different governance arrangements with more or less involvement of social partners are present in different countries, but the common element to all of them is that the evaluation and monitoring of apprenticeships is a key element for ensuring the quality of the training in the workplace.

6 A Mode of Conclusion

The success of political reforms depends largely on how different policy designs interact with the social and economic contexts in which they are implemented, and how social actors react to these interventions. Our literature review has systematised international evidence on some of the challenges and dilemmas that governments in OECD countries face when they want to implement large-scale dual apprenticeship programmes. We suggest that the main challenge they face is to make dual apprenticeships attractive to both employers and students. On the one hand, governments need to understand that, although some employers might have good economic reasons for getting involved in dual apprenticeships programmes, making attractive this policy to the rest of the employers will require a decisive action from the state. This action can take the form of economic incentives targeted to SMEs and specific economic sectors, or even general economic incentives (i.e. employers' led levy systems or 'in-kind' services provided to companies) in order to keep the programme economically attractive to employers during periods of economic

recession. Moreover, and beyond its economic dimension, governments need to get employers' associations and chambers of commerce involved in the governance of the programme in order to convince individual employers of the social good associated to the intervention and its long-term sustainability. On the other hand, governments cannot expect many students to be interested in dual apprenticeships just because it is offered a pay and there are high probabilities of a quick insertion in the labour market. Dual apprenticeships must meet certain conditions if they want to attract a large number of students, particularly if they want to attract students with good academic records and high educational expectations. Some of these conditions include the right balance of generic and specific skills in the curriculum, well-trained trainers and learning conditions in the workplace, a solid regulatory and evaluation mechanisms participated by social partners that ensure the high quality of the training in the workplace.

The challenge of making dual apprenticeships attractive both to employers and students raises a dilemma for policymakers between keeping pilot programmes as small-scale innovations or trying to scale them-up into systemic reforms of their VET provision. Small-scale innovations often are designed to serve the needs of strategic sectors of the economy that demand for a highly skilled manual workforce and that have the capacity and the willingness to invest in the attraction and training of talent. These small-scale innovations will have a significant impact only on a small proportion of students and will co-exist with traditional structures of VET. Scaling-up these innovative experiences, as we have seen in this literature review, would require increasing public expenditure in the incentives offered to employers, the development of new regulation and institutional capacity, and the reform of governance structures in order to include social partners in the management of the system. It is not surprising that many countries have not been able or have decide not to scale-up exemplar pilot experiences of dual apprenticeships to a systemic level.

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Chapter 4

Vocational Education and Training (VET) and the Transition of Young Women and Men to the Labour Market in Middle-Income Countries: A Comparative Analysis Based on International Labour Organization (ILO) Surveys in Jamaica, Jordan, Peru, Tunisia, Ukraine, Vietnam and Zambia

Valentina Barcucci, Lea Zanola, and Michael Axmann

Abstract The ILO works with constituents on improving transitions from education and training to decent work. Understanding young people's pathways is thus essential for the ILO to provide policy recommendations related to VET and skills development in general.

The following pages draw from findings of School-to-Work Transition Surveys (SWTS) conducted by the ILO in 2012–2013 in 28 countries. The seven middle-income countries discussed here are Jamaica, Jordan, Peru, Tunisia, Ukraine, Vietnam, and Zambia. The surveys targeted a nationally representative sample of young people in the age bracket 15–29, and collected data on the educational backgrounds and the labour market outcomes of respondents.

In particular, this brief report focuses on the labour market outcomes of young people who have completed secondary or post-secondary VET, as opposed to secondary academic education, or university and post-graduate studies (together referred to as 'post-secondary academic education' in this report).

With the available evidence, no causal relationship can be claimed at this stage between type of education and labour market outcomes, or between specific characteristics of VET systems and successful transitions of graduates to decent work.

The data in the survey did not distinguish between work-based learning or school-based learning alone or a combination of both in VET. So no statements can be made, for example, about the usefulness of quality apprenticeships, which

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combine both learning types, in the transition of young women and men into the labour markets of these seven middle-income countries.

However, the findings represent an important starting point to orient future research on the role of education in determining young people's transitions to the labour market.

1 Introduction

1.1 *The ILO School-To-Work Transition Surveys (SWTS)*

The ILO SWTS is a detailed household survey covering 15–29-year-olds. It is applied at the national level by statistics offices to generate information on the current labour market situation, the history of economic activities and the perceptions and aspirations of youth. The SWTS data are unique since they shed light on areas usually not captured by household-based surveys, such as youth satisfaction and conditions of work, wages and earnings, and the engagement in the informal economy. While not being designed as a tool to analyse national VET systems, the SWTS data can show associations between labour market indicators and educational attainment of young people. The Work4Youth Project¹, a global partnership between the ILO and The MasterCard Foundation, has implemented the SWTS in more than 30 countries, twice. The indicators discussed in this paper draw from the wealth of datasets that the project has generated.

1.2 *Conceptual Framework*

The paper draws on a conceptual framework that consists of 'quality VET', 'quality employment', and a clear vision of what 'transition' to the labour market means. The two following section will address these notions in detail.

1.2.1 **Vocational Education and Training (VET)**

A comparative analysis of the school-to-work transition of young VET graduates requires some definition. Many terms are utilized to refer VET or parts of it, such as:

¹Detailed information on the project, as well as all its publications and the datasets completed to date, are available upon request on the project's web site: www.ilo.org/w4y. This analysis is based on datasets of surveys completed between 2012 and 2013. Therefore the SWTS data utilized in this analysis are referred to throughout the paper as *SWTSs 2012–2013*.

- Apprenticeship programmes;
- Vocational education;
- Occupational education (OE);
- Career and technical education (CTE);
- Workforce or workplace education (WE) and workforce development (WD);
- Vocational skills development (VSD);
- Technical vocational skills development (TVSD).

The ILO, along with UNESCO, has adopted the term ‘Technical and Vocational Education and Training (TVET)’ to refer to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life (ILO 2010). TVET includes a range of learning experiences that are relevant for employability, portability of competencies and qualifications and recognition of skills, decent work opportunities and lifelong learning in and related to the world of work.

The learning experiences may occur in a variety of learning contexts, including private and public training institutions, workplaces and informal learning settings. For the purpose of this report the term VET is used, as proposed by the organizers of the 2nd International G.R.E.A.T. Conference. Interpretation of the term, however, follows the understanding of TVET as described above.

The SWTS results presented in the following chapters of this paper need to be placed in the context of the VET systems of their respective countries. However, a full-fledged analysis of such systems and their complexities would go far beyond the scope of this paper.

In order to examine the relationship between VET and labour market outcomes, the study identifies three criteria that the authors consider to represent good quality VET. They served as important elements for the interpretation of the SWTS results. The three criteria are:

- *Level of institutionalization*, such as the existence and functioning of VET policies, strategies, legal framework, specialized institutions and coordinating bodies.
- *Involvement of employers in decision making*, or social dialogue mechanisms at the policy level, and for planning, implementation and evaluation of VET in particular.
- *Existence and scope of work-based learning schemes* with a special emphasis on apprenticeship-like programmes.

1.2.2 The School-To-Work Transition

The indicators produced by the SWTS are unique because of the definition of school-to-work transition that is applied. Researchers usually define the transition as the period between the exit from education (either after graduation or after an early drop-out) and the first entry into stable employment. The ILO SWTS was

designed to integrate into this definition the concept of *Decent Work*. More specifically, the SWTS framework considers a transition to be complete only when the duration of employment provides the worker with a sense of security (e.g. a permanent contract), or when the worker feels personally satisfied with the employment opportunity itself. Accordingly, there are three options that can indicate that a young person's transition is accomplished. First, the young person is employed in a stable job. Second, she is in temporary but satisfactory employment. Third, she is in satisfactory self-employment. A young person in any of these employment situations is classified as *transited*.

In line with the conceptual framework of the transition, the SWTS data offer multiple opportunities to analyse the decent work dimension of youth labour markets. This paper takes advantage of these opportunities to observe potential associations between VET and employment quality.

This paper discusses several proxies for quality of employment. The first one is the *status in employment*, which indicates whether a young person is found in wage employment, self-employment, or contributing family work (usually unpaid). The rationale behind this distinction is that not all employment statuses offer the same contractual and economic stability, or social protection. Wage and salaried work is often considered the most favourable employment option, since it is usually associated with a regular wage that may be complemented by benefits.

Another indicator frequently used to assess job quality is the *share of regular employment*, which provides an indication of job stability. Holding a regular job means that a young person has secured employment for at least one year, or is self-employed and has employees.

The *informal employment rate*² is an important indicator of job quality. Young people who are informally employed do not have access to basic benefits such as health care, leave or pension contributions. Informality also tends to be associated with lower pay, underemployment and skills mismatch (Shehu and Nilsson 2014).

In addition, this paper looks at *earnings*, since they represent an important part of a good-quality job. Often, a strong and positive correlation exists between educational attainment and earnings³. Finally, the SWTS makes it possible to measure *skills mismatch* issues⁴, and namely over- and under-qualification of employed youth for the job they have. Un-matching qualifications can have a negative impact on the productivity and satisfaction of workers, and should therefore be part of an employment quality assessment.

²Informal employment is measured according to the guidelines recommended by the 17th International Conference of Labour Statisticians. For details, please see Shehu and Nilsson (2014).

³See for instance Elder and Koné (2014) and Elder (2014).

⁴Young workers with un-matching qualifications are either over- or under-qualified for their job. The skills mismatch between the job that a person does and their level of educational attainment is measured by comparing the international measure of occupational skills categories from the International Standard Classification of Occupations (ISCO) with the level of education in accordance with the International Standard Classification of Education (ISCED). For more details, please consult ILO (2013).

2 The Seven Countries Covered

Out of the 28 countries covered by the ILO SWTS, seven middle-income countries were selected for this study. The full list provided in Table 4.1. A pragmatic selection criterion was the availability of SWTS data at the time of writing. The decision to analyse data from middle-income countries from four regions was made in order to ensure a common basis for comparison on the one hand and a global perspective on the other hand.

Table 4.1 Socio-economic characteristics of the countries covered

	Population, total(millions)	Income level*	GNI per capita (current USD)	GDP growth (annual %)	School enrolment, secondary (% gross)
Jamaica	2.72	Upper middle-income	5220	1.3	89
Jordan	6.46	Upper middle-income	4950	2.8	88
Peru	30.38	Upper middle-income	6270	5.8	90
Tunisia	10.89	Upper middle-income	4200	2.5	91
Ukraine	45.49	Lower middle-income	3960	1.9	98
Vietnam	89.71	Lower middle-income	1740	5.4	<i>n.a.</i>
Zambia	15.54	Lower middle-income	1810	6.7	<i>n.a.</i>

Source: author's own compilation based on World Bank (2013b) data

*Income levels are according to the World Bank income classification, July 2014

Table 4.2 Classification of the VET systems in sample countries

	Level of institutionalization	Involvement of employers in decision making	Existence and scope of work-based learning schemes
Jamaica	Medium	Low	Medium
Jordan	Medium	Low	Low
Peru	Low	Medium	Medium
Tunisia	Medium	Low	Low
Ukraine	Low	Low	Low
Vietnam	Low	Medium	Medium
Zambia	Medium	Low	Medium

Source: author's own compilation based on literature review

Short socio-economic profiles of the sample countries can be found in Table 4.1. The World Bank classifies Ukraine, Vietnam, and Zambia as lower middle-income countries, Jamaica, Jordan, Peru, and Tunisia as upper middle-income.

An analysis based on literature review⁵ and inputs from ILO field specialists has allowed the authors of this paper to categorise the VET systems of the seven countries in our sample according to the criteria discussed above. The results are shown in Table 4.2.

The level of institutionalization in Jamaica, Jordan, and Zambia is somewhat higher than in the other countries, with a VET Law in place, a coordinating body on national level, well-functioning quality control mechanisms, and even specific funds to financing training. Other countries lack important elements. Tunisia, Ukraine and Vietnam have no coordinating body, Ukraine suffers from a weak legal framework, and Peru's level of institutionalization is low in general, with no cohesive national policy, overlapping mandates, and thus no coherent VET system in place. Capacities to translate policies into results, however, remain weak in all countries, e.g. also in Jordan, where the system still suffers from fragmentation.

Even if the social partners in most countries are represented in different VET bodies, their contribution to policy decisions is limited. Often, the Ministries are the dominant actor on the policy level, and in-depth consultation and involvement of employers' and workers' representatives in decision-making is rare. In addition, capacities of social partners are limited. Even in Tunisia, where the social partners belong to the best established and strongest in the region, they are not that well organized in the field of VET. Planning, implementation, and evaluation of VET is state-driven too, and employers' involvement strikingly low. Some good practice examples exist, like Peru's employer-led National Service of Industrial Training, but they remain isolated. Most countries recognized this problem: Jamaica, Jordan, Peru, Tunisia and Vietnam are currently taking measures to strengthen partnerships with the private sector in order to align VET with employers' needs and to improve the labour market outcomes of VET graduates.

The share of work-based learning varies considerably between the countries. While in Tunisia, a majority of VET students learn in full or part-time work-based schemes (*alternance* and apprenticeships), enterprise-based learning is marginal in Vietnam, and the programmes in Ukraine are almost exclusively school-based. Some countries have a long tradition with apprenticeship-like arrangements. Jamaica's apprenticeship Act dates back to the year 1955, Tunisia's first legal texts governing apprenticeships and related programmes are from 1957, and Zambia's

⁵The sources analysed are: HEART Trust/NTA (2014) and World TVET Database (2014) for Jamaica; ETF (2012), ETF (2009), World Bank (2013a), World TVET Database (2014) for Jordan; Jaramillo Baanante M (2009), Rosas Shady D (2006) for Peru; Allais S (2010), ETF (2011), ETF (2009) for Tunisia; Libanova E et al (2014) and Lokshyna O (2012) for Ukraine; Martinez-Fernandez C, Choi K (2012), Specht G and Aippersbach C (2012), World Bank (2012) for Vietnam; Haan H C (2002), TEVETA (2010), World TVET Database (2014) for Zambia.

from 1964. In Jordan and Tunisia, informal apprenticeships are still important for certain sectors and occupations and served as basis for formal apprenticeships introduced in 1974 and 1993 respectively. The scope of such formal schemes, however, is limited, both in terms of scale and diversity of programmes offered. In Peru, Vietnam and Zambia, good programmes exist, but are mainly provided outside the official structures and only in certain sectors (e.g. mining or manufacturing). Often, the limited capacities of training enterprises, quality issues, and the low status of technical jobs are challenging the VET system. Recognizing the potential of apprenticeship-like programmes, several countries currently aim at improving and expanding their offers.

3 Survey Findings

3.1 *Individual Characteristics of Youth in the Survey Samples*

3.1.1 Shares of Youth with Completed VET and Academic Education

Findings from the surveys show that vocational education attracts limited shares of youth in the countries analysed. In some cases the figures are strikingly low, as illustrated in Table 4.3 for instance, only 1.3 % of young Jordanian women have completed secondary VET, and 2.9 % of young males in Vietnam attained post-secondary VET. The data show only few outliers, such as Peru, where 25.8 % of young women are found with post-secondary vocational education.

Consistently across the countries where indicators are available, fewer youth choose VET than academic education. The VET shares at secondary level in Jamaica and Vietnam, for example, are around one-tenth of academic ones. Interestingly though, at post-secondary level the situation reverses in a few cases. In Jamaica, Peru and Zambia, university and post-graduate education are limited to relatively small shares of the overall youth population. In these cases, post-secondary VET is more likely to become an option.

3.1.2 Gender

According to the results of the SWTSs, vocational education lacks gender balance. Men are more likely than women to choose secondary VET. In Jordan for example, male secondary vocational graduates are five times more numerous than female ones, and 2.4 times more numerous in Ukraine.

Figures reverse among youth who completed post-secondary VET. Young women are more represented than men in this group in four countries out of six where indicators are available. For more details, please refer to Table 4.3.

Table 4.3 Shares of youth completing secondary and post-secondary education by sex (percent)

Education level	Jamaica		Jordan		Peru		Tunisia		Ukraine		Vietnam		Zambia	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Secondary Vocational	5.0	3.5	6.3	1.3	*	*	13.4	9.7	9.4	3.9	4.4	6.3	18.4	17.5
Secondary Academic	56.3	49.5	12.8	16.1	57.6	53.7	23.6	21.9	25.6	26.2	50.4	48.3	46.7	41.6
Post-secondary Vocational	15.8	21.1	5.7	7.8	24.8	25.8	*	*	23.8	17.8	2.9	6.7	9.7	7.5
University and Post-graduate	6.1	11.5	18.0	25.9	12.4	12.3	15.0	19.4	38.0	48.2	7.4	9.7	2.0	1.5

Source: author's own compilation based on ILO, SWTSS 2012–2013

M Male, *F* Female

*The survey questionnaire in the specific country did not provide a disaggregation of these data.

3.1.3 Geographic Location

The survey data show that rural youth are less likely to complete VET than urban youth. Figure 4.1 shows that this applies both at secondary and post-secondary levels in most of the five countries where the data allow for such disaggregation.

It could be argued that these results are biased by the rural-urban gap on educational attainment. Rural youth have relatively higher chances to have completed only primary level of education or less. Therefore, Fig. 4.1 may reflect a general rural disadvantage, rather than one specifically related to VET. However, the data show that graduating from *academic* secondary school is a popular choice in rural

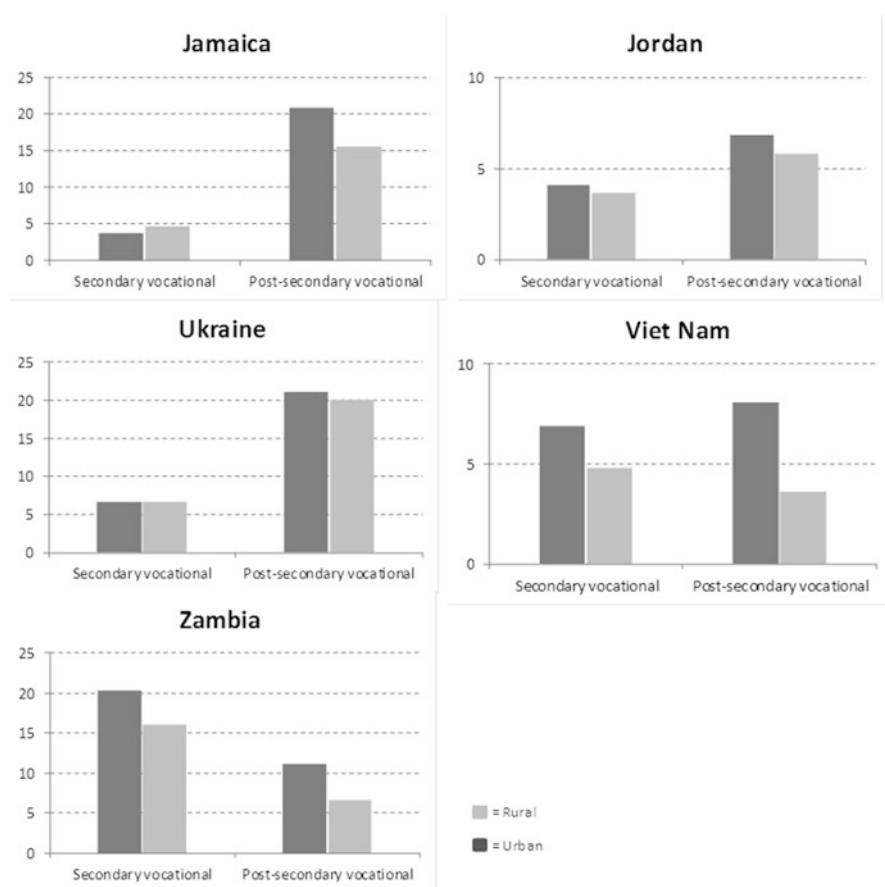


Fig. 4.1 Share of youth completing VET, by level and geographic location⁶ (percent) (Source: author's own compilation based on ILO, SWTSs 2012–2013)

⁶Only countries where the survey questionnaire provided the required data disaggregation are shown.

Table 4.4 Shares of youth completing secondary education and above, by geographic location (percent)

Education level	Jamaica		Jordan		Tunisia		Ukraine		Vietnam		Zambia	
	<i>U</i>	<i>R</i>	<i>U</i>	<i>R</i>	<i>U</i>	<i>R</i>	<i>U</i>	<i>R</i>	<i>U</i>	<i>R</i>	<i>U</i>	<i>R</i>
	Secondary Vocational	3.8	4.7	4.1	3.7	13.0	9.6	1.5	2.0	16.4	24.5	20.3
Secondary Academic	50.1	56.0	13.2	19.7	25.7	18.6	6.6	6.7	6.9	4.8	46.0	42.4
Post-secondary Vocational	20.9	15.6	6.9	5.8	*	*	21.4	36.1	42.3	51.9	11.1	6.6
University and Post-graduate	10.6	6.7	21.3	23.4	23.1	8.6	21.1	20.1	7.4	3.6	1.6	1.8

Source: author's own compilation based on ILO

U Urban, *R* Rural

*The survey questionnaire in the specific country did not provide a disaggregation of these data.

areas. The same cannot be said about *vocational* secondary education. These results suggest that governments in the countries reviewed have invested in improving accessibility and quality of academic education for rural youth. However, they may not yet have made the same effort to upgrade secondary VET, or above levels.

3.1.4 Household Income Levels

The survey enables to measure young respondents' household income levels. Table 4.4 shows that at the secondary level, academic education is consistently the preferred option in all countries and across all income levels. Once again, results are more mixed when it comes to post-secondary education. In Zambia youth who have completed post-secondary education are *more* likely to choose VET, regardless of their household income. Previous calculations on SWTS data also show that, in most countries analysed in this paper, shares of graduates increase with household income for both vocational and academic options. This means that education in many contexts is still a privilege of well-off youth. This finding applies quite consistently to academic education and less so to VET.

3.2 Activity Status of Youth

The following paragraphs discuss one more characteristic of VET graduates, and namely their activity status. For that purpose, the labour force participation of young people who completed VET is compared with the one of their academic education peers. If they are in the labour force, either as employed or unemployed individuals, they qualify as active youth. Conversely, if they have opted out of the labour market, for instance because they are at home with no intention to work in the future, they are defined as inactive. The share of employed and unemployed individuals out of

the total population defines the rate of participation in the labour force, while its inverse is the inactivity rate.

3.2.1 Employment

In most countries analysed, secondary VET graduates are more likely to be in employment than secondary academic graduates. The only exceptions are Jamaica and Zambia. Interestingly, the situation reverses at the post-secondary level. University graduates are more often found employed than post-secondary VET graduates in all cases but Peru, where the advantage of vocational graduates is minimal (1.1 percentage points).

3.2.2 Unemployment

Unemployment among youth who have completed secondary education or above is high in most countries of the sample, regardless of the specific educational choices. Table 4.5 indicates that unemployment rates exceed 20 % in five countries. The exceptions are Peru and Vietnam, where high levels of informal employment raise doubts on the quality of available employment opportunities.

A comparison between academic and VET graduates reveals that in Tunisia, graduates from secondary academic studies face significantly lower (more than ten percentage points lower) unemployment rates than their peers from VET schools. The opposite applies to Jordan. In the other countries analysed the gap between the two types of education is smaller. Among all countries taken together, the findings at secondary level are mixed. On the other hand, at the level of post-secondary education VET graduates face higher unemployment rates in four countries out of six where data are available.

Table 4.5 Unemployment rates of youth, by educational attainment (secondary and above) (percent)

	Jamaica	Jordan	Peru	Tunisia	Ukraine	Vietnam	Zambia
Secondary Vocational	34.6	11.4	*	36.6	20.5	2.6	20.2
Secondary Academic	35.1	22.7	11.1	26.2	20.3	1.8	24.3
Post-secondary Vocational	31.5	22.6	5.1	*	14.9	12.9	22.4
University and Post-graduate	21.8	29.5	8.3	49.4	9.3	7.6	19.7

Source: author's own compilation based on ILO, SWTSs 2012–2013

*The survey questionnaire in the specific country did not provide a disaggregation of these data.

3.2.3 Inactivity

The rate of youth participation in the labour force changes with type of education and with level attained. At the secondary level, inactivity rates are higher among academic graduates. In some cases the difference between shares of inactive youth among secondary VET versus secondary academic graduates is considerable. The largest discrepancy is observed in Jordan (30.4 percentage points), where it is mostly due to the large portion of non-working women in the population. Among post-secondary graduates, on the other hand, those who completed an academic track are *less* likely to be inactive. This applies to five countries out of seven analysed.

3.3 *Quality of Employment*

The section above has looked at the likelihood that VET and academic graduates are found employed, unemployed or inactive. This section will focus on the employed in particular. The survey data show that young people who have completed secondary VET have especially high chances to be found in employment, while the same does not apply to post-secondary VET graduates. In order to put this information in a context, we need to assess the quality of the employment opportunities that VET graduates find.

3.3.1 Status in Employment

Youth with completed VET do not have systematically lower or higher chances to be in wage and salaried employment, compared to youth with academic education.

It is interesting to disaggregate the indicators of status in employment by sex. Young women who completed VET have lower chances than men to find wage and salaried work. Figure 4.2 illustrates these results. A negative value in the charts indicates relatively lower shares of female wage and salaried workers. Some degree of female disadvantage is observed in all countries analysed among youth who completed VET. The opposite is true regarding academic education.

The survey results do not point to a clear pattern on self-employment. They do, however, regarding contributing family work. This refers to an employment status whereby a young person works on her own account, and usually unpaid, in a market-oriented establishment operated by a relative living in the same household. In the majority of countries reviewed academic education is associated with relatively

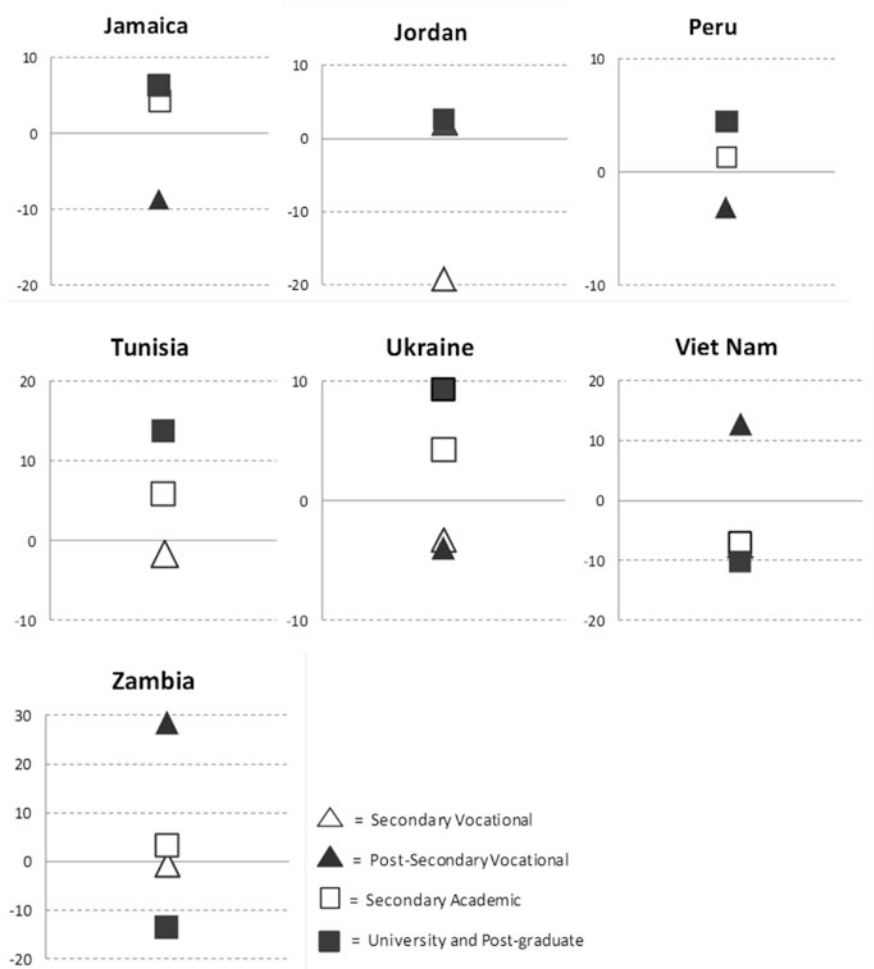


Fig. 4.2 Difference between female and male shares in wage and salaried employment by educational attainment (secondary and above)⁷ (percent) (Source: author’s own compilation based on ILO, SWTSs 2012–2013)

higher shares of contributing family workers, especially at the secondary level. In Vietnam the percentage is almost four times larger than that of VET graduates in the same type of employment. Among post-secondary graduates the results are more mixed.

⁷Disadvantage of females is indicated by a negative value (relatively lower shares of female wage and salaried workers).

Table 4.6 Shares of employed youth in regular employment, by educational attainment (secondary and above) (percent)

	Jamaica	Jordan	Peru	Tunisia	Ukraine	Vietnam	Zambia
Secondary Vocational	62.8	86.1	*	60.0	79.5	72.7	31.0
Secondary Academic	62.3	92.6	27.9	60.8	86.2	41.0	37.3
Post-secondary Vocational	61.2	96.5	34.6	*	84.6	65.5	66.7
University and Post-graduate	77.3	93.5	34.2	72.4	85.5	85.5	68.8

Source: author's own compilation based on ILO, SWTSs 2012–2013

*The survey questionnaire in the specific country did not provide a disaggregation of these data

3.3.2 Regular Employment

In the majority of countries analysed, youth completing academic studies have higher chances to have such stable employment prospects than their peers who opted for VET.

These findings apply at the level of secondary education with few exceptions, but the gaps between VET and academic education is small. At the post-secondary level the discrepancy is more prominent. Table 4.6 shows the results for all countries in the sample.

Vietnam stands out as an outlier, since 72.7 % of youth who completed secondary VET have a regular job, as opposed to only 41.0 % of graduates from a secondary academic track. However, it is important to point out that this VET advantage accounts for a limited number of youth, since only 4.4 % of young males and 6.3 % of females who are out of school have completed secondary VET in the country.

3.3.3 Informal Employment

If measured through this indicator, the quality of jobs accessible to VET graduates appears relatively low. Data from the SWTSs indicate that vocational graduates have relatively higher informal employment rates at post-secondary levels, while the results are less clear at the secondary level.

If informal employment data are disaggregated by sex, they reveal a prominent gender gap at the disadvantage of women. Figure 4.3 summarizes these results. A positive value in the charts indicates higher informality rates among employed women than among employed men. Female disadvantage emerges prominently across almost all levels of educational attainment, and in all countries except Vietnam.



Fig. 4.3 Difference between female and male informal employment rate by educational attainment (secondary and above)⁸ (percent) (Source: author’s compilation based on ILO, SWTSs 2012–2013)

3.3.4 Earnings

The survey findings in the seven sample countries illustrated in Fig. 4.4 confirm it only with regard to academic education. In all countries, young people completing secondary academic studies can invest in post-secondary studies with some confidence that their investment will secure better earnings. The same does not apply to youth in Jamaica, Ukraine and Vietnam, where post-secondary VET graduates face

⁸Disadvantage of females is indicated by a positive value (higher informality rates among employed women).

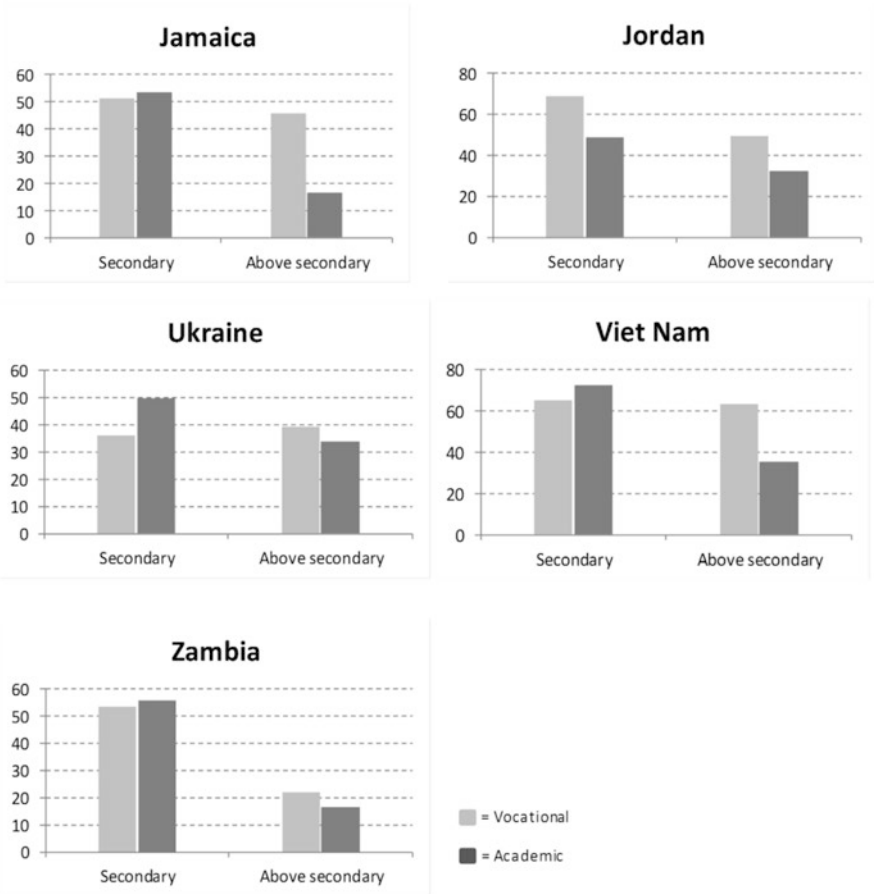


Fig. 4.4 Share of employed youth earning below the average⁹, by educational attainment (secondary and above) (percent) (Source: author’s own compilation based on ILO, SWTSs 2012–2013)

slightly *higher* chances to earn below the average than those youth who left education after secondary VET school.

A comparison between VET and academic education shows that a secondary VET degree is associated with lower chances to earn below the average. The opposite applies at the post-secondary level. In all countries analysed the lowest risk to earn below the average is associated with a university or post-graduate degree.

⁹For the purpose of calculating this indicator, monthly wages of employees and daily, monthly or other time-specific earnings of own-account workers were converted into weekly rates for comparability. Contributing (unpaid) family workers were excluded from the calculation. Only countries where the survey questionnaire provided the required data disaggregation are shown.

3.3.5 Skills Mismatch

In the five countries where data disaggregation is available, employed youth who completed VET have relatively more chances to have a job that does *not* match their qualifications. With few exceptions, shares of employed youth un-matching skills are lower among academic graduates. In some cases the difference is significant. For instance in Jordan, youth who completed post-secondary VET have three times more chances to face skills mismatch issues than graduates from university and post-graduate studies. These results are illustrated in Fig. 4.5.

It is interesting to notice that relatively few employed VET graduates feel that their education is relevant to their jobs. The survey questionnaire includes a question on young workers' perception in this regard. The answers are shown in Fig. 4.6. Young people with completed secondary VET are a lot less satisfied about the relevance of their education, vis-à-vis their academic education peers. Across countries, gaps range from 5.2 percentage points in Jordan to 49.5 in Jamaica. The results are more mixed at the post-secondary level. Taken together, all results point at a generally low alignment between learning content and labour market requirements. Even among academic, the highest share of satisfaction is barely above 50 % (in Jamaica).

3.4 Youth Transitions to the Labour Market

At the level of secondary education, three out of five countries with available data have larger shares of transited youth among VET graduates. However the situation totally reverses at the post-secondary level. Youth graduating from university or post-graduate studies have better chances to complete their transitions in all five countries where data disaggregation is possible. Figure 4.7 illustrates the survey findings.

4 Conclusions and Recommendations

4.1 Summary of Survey Findings

The indicators calculated from the 2012–2013 SWTSs in Jamaica, Jordan, Peru, Tunisia, Ukraine, Vietnam, and Zambia point at the following findings:

- *Characteristics of Youth in the Sample* – VET attracts limited shares of youth in the countries analysed, and women are particularly underrepresented among young people completing secondary VET. Youth in urban areas are more likely to complete VET than their peers in rural areas.
- *Activity Status of Youth* – In most countries analysed, secondary VET graduates are more likely to be in employment than secondary academic graduates.

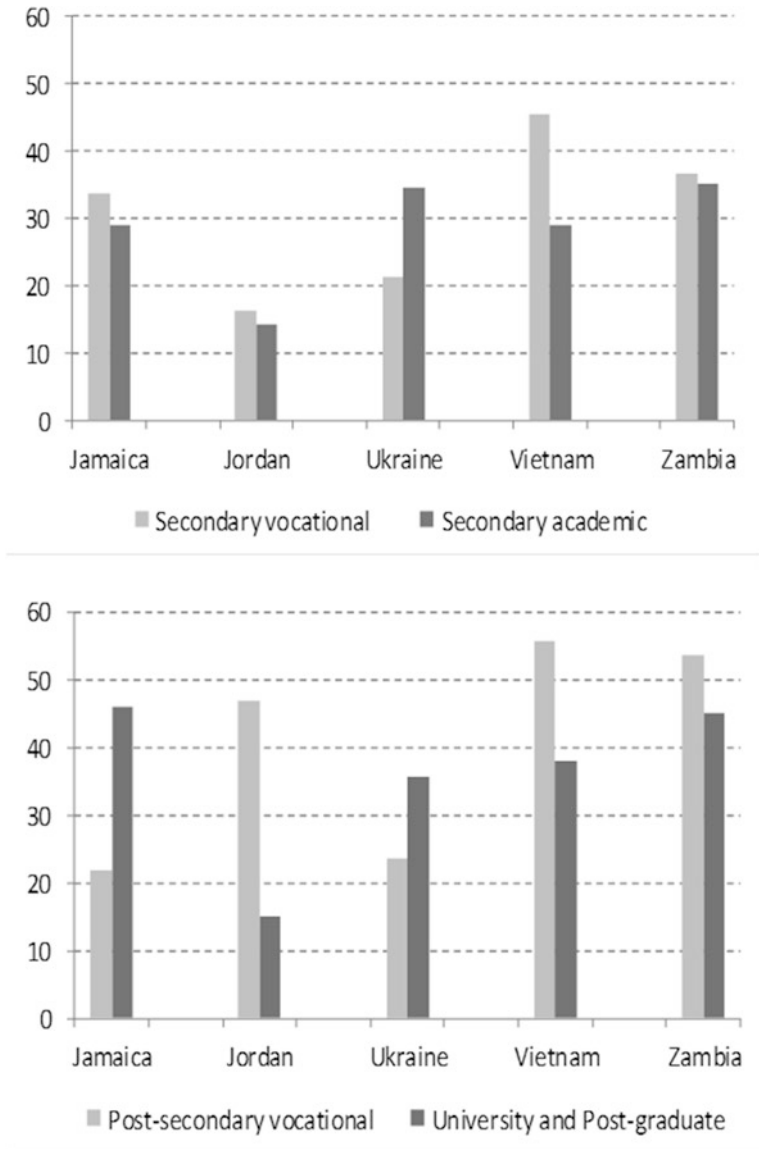


Fig. 4.5 Share of employed youth with un-matching qualifications by type of education completed (secondary and above) and country (percent) (Source: author’s own compilation based on ILO, SWTSs 2012–2013)

Interestingly, the situation reverses at the post-secondary level. Regarding the risk of unemployment among graduates, findings are mixed at secondary level of education. At post-secondary level on the other hand, unemployment rates are higher among VET graduates in the majority of countries analysed.

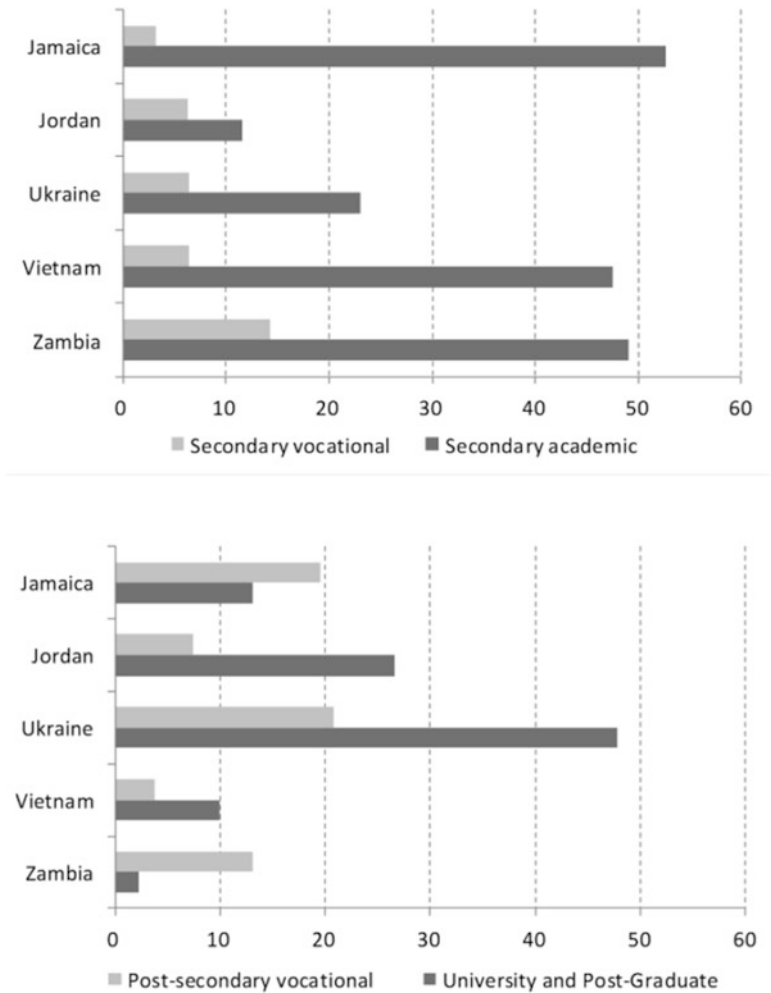


Fig. 4.6 Share of employed youth by educational attainment (secondary and above) who feel that their education/training qualifications are relevant to their jobs¹⁰ (percent). (Source: author’s own compilation based on ILO, SWTSs 2012–2013)

- Quality of Employment* – This dimension is investigated through several indicators. Youth completing VET have higher chances to be found in *irregular employment*, and face higher informal employment rates at post-secondary levels (while the results are less clear at the secondary level). In addition, a disaggregation of all indicators by gender shows apparent gaps on employment quality. For instance, young women who completed VET have lower chances than men to

¹⁰The survey questionnaire in Peru and Tunisia did not provide a disaggregation of all data.

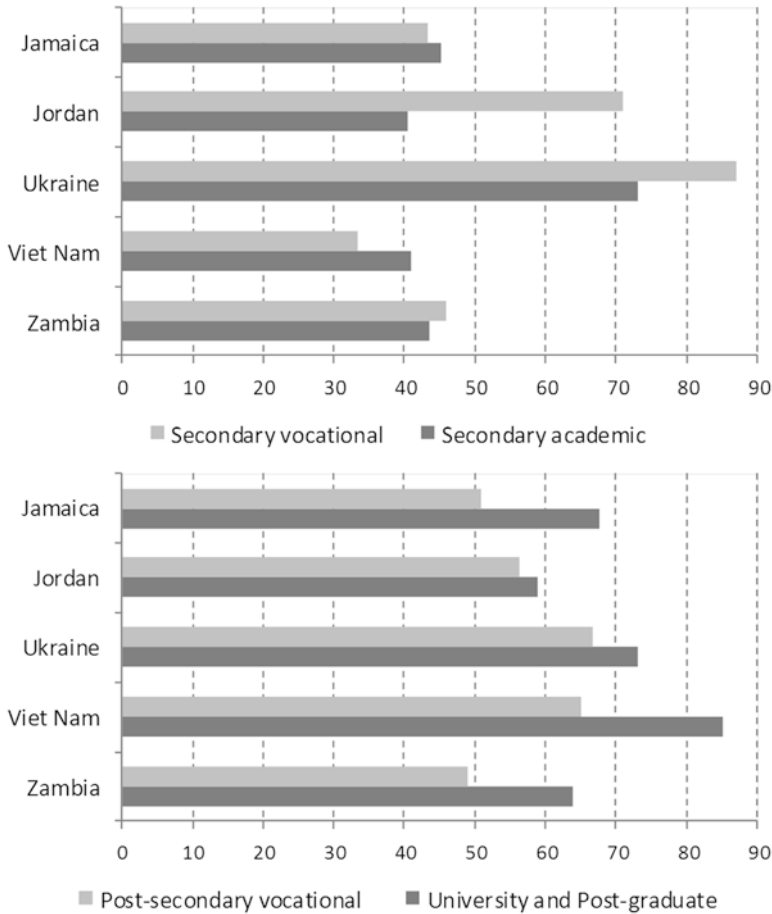


Fig. 4.7 Share of transited youth by educational attainment (secondary and above)¹¹ (percent). (Source: author’s own compilation based on ILO, SWTSs 2012–2013)

find *wage and salaried work* and face higher informal employment rates. When it comes to *earnings*, a secondary VET degree is associated with lower chances to earn below the average, while the opposite applies at the post-secondary level. Finally, employed youth who completed VET have relatively more chances to have a job that does *not match their qualifications*. In addition, relatively few employed VET graduates feel that their education is relevant to their jobs.

- *Transition* – Among young people who have completed secondary education, a vocational track is associated with higher chances to have completed the transition. However, the situation reverses at the post-secondary level of education.

¹¹ The survey questionnaire in Peru and Tunisia did not provide a disaggregation of all data.

4.2 Conclusions

The findings of the SWTSs allow the following conclusions:

- *Share of Youth in VET* – VET attracts limited shares of youth in the countries analysed, with women being particularly underrepresented. *This suggests that secondary VET poorly caters for the needs and interests of youth, and especially female students.* Indeed, in most countries analysed, the offer is limited, both in scale and variety, the quality of the programmes insufficient, and the status of technical jobs low. In addition, there is a clear urban-rural gap in completing VET, suggesting that accessibility and quality of VET may be higher in cities, and make urban youth more likely to opt for VET and complete it.
- *Labour Market Outcomes of VET Graduates* – No clear pattern can be observed with regards to the labour market outcomes of VET graduates compared to their academic peers. Their situation is generally better when it comes to the likelihood to be in employment or to have completed the transition, and the lower chances to earn below the average (these results only apply to the secondary level). However, employed VET graduates have relatively more chances to have a job that does not match their qualifications. In addition, *relatively few feel that their education is relevant to their jobs.* This could – at least partly – be explained by the lacking labour-market orientation of VET due to limited employers' involvement in the countries analysed.
- *Secondary vs. Post-Secondary* – VET Interestingly and surprisingly, labour market outcomes of VET graduates significantly differ between the secondary and post-secondary level. While the findings for the secondary level are often mixed, the results for the post-secondary level are relatively clear. Contrary to the expectations and the results concerning the academic track, a higher educational attainment in VET does not lead to improved labour market outcomes. On the contrary, *the situation of post-secondary VET graduates (compared to their academic peers) is generally worse than the one of secondary VET graduates (compared to their academic peers),* e.g. with regards to the likelihood to be employed, the risk of unemployment, the chances to have completed the transition, the chances to be found in irregular employment, the informal employment rates and the chances to earn below the average. This significant difference in labour market outcomes on secondary and post-secondary level cannot be explained with the data available. This is particularly true, because experience from countries with strong VET systems show, that there is a high demand for post-secondary VET graduates as they are – with their specific and market relevant skills – an important factor to increase the productivity of the economy. One might therefore speculate that post-secondary VET in the countries analysed is of particularly low quality, and a last resort for those youth who could neither find employment after secondary VET nor follow the academic track.
- *VET Quality* – The findings of the seven surveys clearly show that the quality of a VET system is crucial to realize its potential to contribute to a healthy labour market and to young people's smooth transition from school to work. The authors

are – confirmed by ILO experience – convinced that good quality VET is based on strong institutional and policy frameworks, well-functioning social dialogue mechanisms, employers’ involvement in planning, implementing and evaluating VET, and the existence of work-based learning schemes, such as quality apprenticeships.

With the available evidence, however, no causal relationship can be claimed between type of education and labour market outcomes of youth. In order to identify characteristics of a VET system conducive for a successful transition into decent work, more detailed data would need to be gathered.

One relatively easy way would be to adapt the ILO SWTS methodology accordingly as in the actual format the only distinction of VET refers to secondary vs. post-secondary education. It is therefore suggested to include, for instance, questions concerning the ratio of school-based to work-based learning, the effective combination of both, such as in quality apprenticeships, or the duration of the attended programmes.

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Chapter 5

Learning to Innovate by Connecting Interprofessional Judgement – Exploring the Digitised Creative Sector in the Gulf

Náder Alyani and David Guile

Abstract In this chapter, we first provide a circumscribed review of the creative sector as a potential employment-creating sector, specifically in the digitised creative segment in Iran, Saudi Arabia and United Arab Emirates. Whilst acknowledging the previous work on the Technical Vocational Education and Training (TVET) systems and the increased entrepreneurship education efforts in these countries, we focus on the learning and upskilling required for innovating in the nascent creative sub-sectors, such as digital marketing and advertising (e.g. mobile value-added services (VAS)); media and entertainment (e.g. television and film, and gaming); and digital commerce (e.g. start-ups and new technology based firms (NTBFs)). Our geographical focus remains on the context of Tehran, Jeddah (and Khobar), and Abu Dhabi and Dubai. Secondly, exploring the in-situ learning episodes within a conceptual model, created via primary and secondary data sources, we point to the prominent use of skill webs as means of in-project upskilling and a resource for development of inter-professional learning and judgement capability which forms a core ingredient for innovation. Lastly, the final section briefly points to recent policy vistas and concludes.

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1 New Sectors and Employment in the Gulf¹: A Glance at Iran, Saudi Arabia and the United Arab Emirates

1.1 *The Context: A Mismatch in Education and Training (And the Potential Demands of Sector-Specific Growth Engines)*

This section sets the contextual scene, in a brief and thus circumscribed manner, before moving in the following Sect. (1.2.) to look at the features of the digitised creative sector. The next Sects. (2.1. and 2.2.) deal with issues of enterprise-based processes of workplace learning and development, and rapidly zoom in on the issue of interprofessional judgement, including a brief conceptual discussion. The last Sect. (3.) concludes by exploring three factors in policy and programme design (and re-design), whilst pointing towards the new vistas in policy.

There is much written and broadcast in the journalistic realm, often with a geopolitical twist, and an increasing volume in consultancy reports broadly about the Persian Gulf region, yet relatively little robust material is directed at the specific economic and sustainable development requirements. So whilst the long-term policy aim of economic diversification is a near-constant priority rhetoric, little coherent and consistent attention has traditionally been paid to new sectors with the overhaul of an industrial policy, such as the creative sectors, in Islamic Republic of Iran (IRI), Kingdom of Saudi Arabia (KSA) and United Arab Emirates (UAE). That (often incidental) policy and practice oversight is however changing.

Within the recent years, Iran, KSA and UAE, emerging as key regional actors, are actively seeking ways to secure their economic futures, looking East as well as West, and beyond their hydrocarbon assets: these include designing and formulating more cohesive and implementable policies to build an ability for entrepreneurial innovation to drive their economies in line with international best practice (OECD 2010a, 2013a, 2014), and in parallel, enhance their citizens' skills for competitiveness, in spite of chronic educational, skill and employment challenges.

There is a robust body of evidence accumulated over the last three decades indicating that innovation, and the skills to learn to innovate, building upon workplace learning and commercial purpose of projects, enhanced by education and lifelong learning (LLL), are of paramount importance in nations' economic development. This is equally well understood and captured in a succession of recent development plans and national strategies of Iran, Saudi Arabia and United Arab Emirates.

The genesis of this chapter was a presentation and animated discussions on the *crisis* of youth employment issues (and in some cases, 'yester-years' youth' of under 35, still struggling within the system) held at, and hosted by the University of

¹The historically steeped term of Persian Gulf, originating from the Greeks and the newer term of Arabian Gulf, based on Pan-Arabism ideology of 1960s are the full official terms currently used respectively in Iran and Gulf Cooperation Council (GCC) States (e.g. KSA and UAE), to refer to the same waterway/region.

Cologne in autumn 2014, examining a number of globally emerging patterns. Whilst there were clearly many similarities with the global position, both on employment including unemployment, under-employment and mismatching of skill issues (Schleicher 2014; OECD 2010b, 2013b), and an acknowledgement of the diversity and challenges of TVET systems globally (Bosch and Charest 2010), a few unique challenges were also identified, specific to the countries in our focus.

As an example, whilst it should be highlighted that, based on dedicated local and national level work in the last five years, assisted by UNESCO and UNEVOC, the renewed brand and image of the TVET systems in the three countries have been somewhat elevated, the legacy of the systems in the perception of many employers, parents and young people themselves, remains problematic. As a landmark World Bank report commented, within the region, TVET has traditionally been viewed as:

The ‘poor cousin’ of the education family... (and regionally, have been) relatively unsuccessful in linking training with employment... (furthermore, as) VET is usually the reserve of those who have not done well in compulsory education, many students do not have a firm grasp of the basic skills necessary to learn more challenging technical competencies... (and thus, it) largely fails to put students on a clear pathway to further education and training options. (Galal 2008, p. 93)

Furthermore, three early caveats are worth front-loading here: Firstly, Iran, Saudi Arabia and UAE in the last decade and half, have witnessed a massive rise in the provisions of their higher education and as such, many university and polytechnic/ further education colleges’ graduates now compete in the school-leavers’ labour market and talent pool. Whether the quality of the expanded higher education sector has kept-up with its quantity; whether the choice of courses of studies offered has been congruent with the needs of the labour market; and how far of a decoupling between education and economic growth² now exists, are all open debates.

Additionally, consider a recent empirically-robust argument (using longitudinal and big-data tools) in development economics advocated by Harvard University’s Centre for International Development, highlighting that:

As is often the case, the experience of individual countries is more revealing than the averages. China started with less education than Tunisia, Mexico, Kenya or Iran in 1960, and had made less progress than them by 2010. And yet, in terms of economic growth, China blew all of them out of the water. (...) (Hausmann 2015, p. 22). Furthermore, (...) there is more bad news for the ‘education, education, education’ crowd: most of the skills that a labour force possesses were acquired on the job. What a society knows how to do is known mainly in its firms, not in its schools. At most modern firms, fewer than 15 percent of the positions are open for entry-level workers, meaning that employers demand something that the education system cannot – and is not expected – to provide. (Hausmann 2015, p. 23)

Secondly, whilst there are existing surveys of the TVET and LLL systems, both regionally (Galal 2008) and in the three countries (UNESCO-UNEVOC 2014; for a recent commentary see Baqadir et al. 2011), we have attempted to steer in a different,

²Robust and up-to-date data on the link between education and economic growth within the three countries is hard to pin-down: for a historical analysis (1960–2003), covering the larger region, and aggregated data, of Middle East and North Africa (MENA), pointing to a weak link, refer to (Galal 2008).

and in our view, potentially more generative direction. Thus in this chapter, it is not our intention to address ‘macro’ education and economy’s links, including in TVET and higher education, reforms and policy implications, but rather wish to open a preliminary dialogue and reflection, by looking at new sectors and the associated changes in work arrangements (instead of the ‘legacy’ education and training systems, within existing sectors), based on the specific focus of our study.

Our third caveat, again based on the specific sectors under exploration is to background the national systems and wherever possible foreground, and thus focus more on the local city-wide and regional ecosystems based on the enterprises in practice, specifically at Abu Dhabi and by natural sectoral extension, Dubai, UAE; Jeddah (and a glance at Khobar), KSA and Tehran, Iran. Lastly, we do not claim finality on our current perspective for the five city regions, as our work on a sector-specific empirical level remains in-progress³.

Condensing a range of *macro-meso-micro* level policy issues, we highlight that three overarching strategies are actively at play, whilst being contested, debated and promoted at the national, regional and sectoral levels of the three countries explored: these national strategies can be themed across three strands as:

- Diversification of the economy, whilst retaining stability;
- Technological ‘catch-up’ and development; and
- Labour market restructuring, enhancing sustainable private-sector job-creation.

These strands are highly interconnected and sensitive to market demands and perceptions. At times, stability needs to be re-injected (by the State) to retain the system’s balance and avoid too blatant of ‘market-failures’. A core notion, underlying these strands is to build-up the national capacity and improve the prospects of national competitiveness. Equally, there is an increasingly visible policy acknowledgement, at all levels of the political echelons of the three countries that new sectors which have the potential to generate new private sector jobs, and thus reduce and relieve the burden of unemployment, particularly in the ‘educated young’, are in need of developmental assistance, in an effort to build a sustainable job-creation pipeline. This is particularly intense where there is a demographic youth bulge (such as in KSA and UAE). In short, whilst the state is still the key *enabler* and to a large extent, the *provider*, it cannot remain so indefinitely. Therefore the role of the private sector and small and medium sized enterprises (SMEs) and within that, the fast-growing NTBFs and their potential in offering a lion’s share of future decent jobs is under policy spotlight. Furthermore, whilst manufacturing has traditionally been viewed as the bastion of industrialisation (and thus, ‘progress’) in these countries, it is now the service sectors that acts as the firm- and employment-creation engine, and offers a more secure mechanism to the potential of higher value-added growth path (potentially by linking to a global value-chains (OECD 2013c)).

In line with international policy trends, innovation and entrepreneurship, and by extension educating for innovation and entrepreneurship, is starting to be consistently

³For an update, please consult the project’s microsite at reignitinginnovation.com.

promoted. In this policy domain within the region, a range of policy tools, instruments and metrics (such as longitudinal data offered by World Bank's '*Ease of Doing Business*', the *Global Entrepreneurship Monitor* (GEM) project, and World Economic Forum's innovation indicators and *Global Innovation Index*, embedded within their annual *Global Competitiveness Report*) are drawn upon both by comparative researchers and policy analysts.

In parallel and in line with global trends (UNCTAD 2008; Strategy and PwC 2013), policies to enhance a move towards a *Creative Economy* and as part and parcel of that, vibrant digitised creative sectors, are increasingly apparent on the three countries' *policy radars*.

Before ending this sub-section, a last point of information is called for. As descriptive data, such as national (and city-region) economic and demographic data is now readily available online, from multiple sources (World Bank 2015), we have not felt it necessary to list these explicitly. However, the following unique demographic patterns could helpfully be noted.

By the end of 2015, relatively *conservative estimates* indicate that demographics⁴ of our three countries in question will be as follows. KSA's population will be around the 30 million mark, of which approximately 45 % will be female (and 55 % male, higher due to a large migrant labour force): the growth rate is stabilised at around 1.5 % per annum, and with an approximate migrant (non-Saudi) residents of 32 %. The population of UAE will be around 10.5 million mark, of which approximately 31 % will be female (and 69 % male, much higher due to a significant unaccompanied men labour migrant percentage): the growth rate is stabilised at around 3 % (whilst bearing in mind that with a population of about 3.4 million in 2004, UAE saw double digit demographic growth, primarily via migrant workers, between 2005 and 2010), and an approximate migrant (non-Emirati) residents of 88+ percent. Lastly, Iran's population is likely to reach the 80 million mark, of which approximately 49.5 % will be female (and 50.5 % male, including a small number of migrant labour, relative to the overall population): the growth rate is stabilised at 1.25 % and an approximate (non-Iranian) residents of 2–2.5 %, mainly composed of the majority Afghan migrant, and a smaller, Iraqi émigré communities. Whilst 'nationalisation' (meaning using the local workforce) is not a particular challenge for Iran, it has become a lingering policy challenge for UAE and KSA (referred to as *Emiratisation* and *Saudisation* of the labour force).

As to the city-regions within our focus, Tehran's city population is (probably under-reported at) around 8.4 million, with 12.6 million in the Tehran metropolitan area, marking it as Iran's most significant business hub and largest urban area and the largest city in Western Asia. Whilst Abu Dhabi and Dubai in UAE, and Jeddah (and Khobar, as part of Damman-Dhahran-Khobar area) in KSA may be somewhat smaller in terms of population, each of these city-regions are ambitiously and consistently endeavouring to place themselves as the sector-specific business hubs of their region.

⁴The data is based on consolidation of multiple sources and for the Gulf region, guided by the Gulf Labour Market and Migration (GLMM) research.

Abu Dhabi for example leads the way in terms of sectoral planning and infrastructural projects, and has increasingly placed greater emphasis on the creative sector, such as focusing on Arabic-language digital media content (Financial Times 2014b). Equally, although at early stages, Jeddah and Khobar are capacity-building for the sector (SNCI 2015) based on niche markets and solid infrastructure, including practical assistance on national-level practice and policy-borrowing from EU and Republic of Korea (SK Telecom 2015). This is couched within a background of a significant economic and sectoral diversification policy within the Saudi Arabia's future planning (Financial Times 2015; Hoteit and Tuerpitz 2015; KSA IC 2015).

Whilst the largest in terms of human resources, Tehran's industrial and sectoral policy outlook is much more organic and in reality 'bottom-up driven', as the recent years' 'top-down' sectoral plans have generally struggled to gain traction. With the relative détente of geopolitical tensions, this includes various emerging innovative service designs, enhanced by boundary-spanning interactions and sectoral expertise, and seed-financing with the technology diaspora communities via US and EU, but also lumbered with significant infrastructure, sectoral *implementable policy* and skills provision challenges (UN Iran Office 2013; Financial Times 2014a; The Observer 2015). Iran's sectoral challenges are multi-faceted including an educated, yet compared with international neighbours and standards, relatively unskilled workforce, combined with an inflexible labour market.

In the next sub-section, we briefly outline core features of the digitised creative sector, in general before turning our attention to a case vignette.

1.2 The Digitised Creative Sector in Brief

There is an increasing volume of diverse literature on the creative (and cultural) industries and sectors, including definitional differences in various countries: reviewing the field, which has also become firmly established as a global policy concept, is not our task here. Rather, we limit ourselves to noting the following: creative sectors build on widely-accepted assumptions that investment and innovation in entrepreneurial 'creative' services can generate economic return and growth, both on a city/regional level, and by extension, feed into national levels. The creative features, refers to an economic sector in which creativity, human and social capital, combine with urbanised interconnected entrepreneuriality, rather than relying on purely physical assets of land, labour and capital/finance. As the field has matured, a number of sectoral approaches have identified the digitised segment of the creative sector as a core area worthy of careful policy attention (Strategy and PwC 2013) based on its high growth potential with features of *gazelle* firms (Henrekson and Johansson 2010). As of 2015 re-classifications, the sector includes sectoral categories such as 'film, video and photography', 'music and the visual and performing arts', 'software, computer games and electronic publishing', as well as advertising, design, fashion, crafts and, museums and galleries.

It is worth pointing out however that the above classifications do not always hold strictly as in the day-to-day practice of the sector, firms frame and attempt to solve business problems by cutting-across different sub-sector specialities. Consider for example a mobile application software development project, which is funded by a bank for the dual purpose of its advertising and branding, as well as enhanced service design (e.g. in creating multi-channel service delivery for interactions with the bank, collection data-points and transactions with the client's account). Or a lifestyle website with instructional videos on Arabic cuisines and culinary, which markets niche fashion and kitchenware (craft) too, essentially acting as an advertising test-bed and gateway platform, including recommendation on music to cook, or to dine with. Convergence in technology and social trends therefore can create complex interdisciplinary and thus, interprofessional skill requirements for the project's back-office.

Added to the older discourses on creative industries and sectors, a more recent policy frame has turned towards endorsing a *creative economy*⁵ concept, as a potential pathway to growth and job-creation for specific regions and cities of the developing (and developed) economies. We therefore acknowledge that both the digitised creative sector activities, and the broader creative economy concept, despite their inherent ambiguities, have started to draw the attention and interest of the policy makers, both globally and in the gulf region.

We turn next to briefly outline, in broad terms, some of working features of the nascent creative sub-sectors. For our purposes, following a brief sectoral description, we retain our attention on digital marketing and advertising (e.g. mobile VAS); media and entertainment (e.g. television and film, and gaming); and digital commerce (e.g. start-ups and NTBFs, which is currently riding on a wave of interest (The Economist 2013a, 2014a, b)), with our geographical focus on the context of Tehran, Jeddah (and Khobar), and Abu Dhabi (and Dubai). At this moment in time, our empirical data based on previous work, is a combination of primary (firm-based organisational ethnography) and secondary sources of document analysis for Tehran (Alyani 2016a), and secondary sources, policy document analysis and desk research for Jeddah and Abu Dhabi (Bhargava and Kaabi 2014; for a policy context also see Jamjoom 2012; Baqadir et al. 2011; Al-Waqfi and Forstenlechner 2014).

So as to ground our conceptual argument on interprofessional learning and judgement, we selectively draw on recent studies (Guile 2011a, b; Guile 2012a, b), where the issue of interprofessional learning and judgement within the sector, inter alia, has been addressed. Building on those earlier conceptual work, we move on to

⁵Analysts point to the trend that other nomenclatures has in various periods of the recent decades been adopted for similar conceptions, such as the digital-/internet-economy, information-economy/-society and even bordering on knowledge economy terrains (For a discussion see Carlaw et al. 2006). Additionally, the process of digitisation is now assumed to fulfil the requirements for a general purpose technology (GPT), which can then (potentially) contain far reaching economic and societal consequences (Lipsey et al. 2005), as it has rapidly so far spread, and continues to spread, “universally through disparate aspects of production and consumption in the economy” (Handke and Towse 2013, p. 2).

provide an abridged case-vignette⁶, based on a recent sectoral study of innovation and learning within the digitised creative sector (Alyani 2016a, b). As we explore, by analysing and interpreting the in-situ learning episodes on a conceptual level, via primary and secondary data sources, we point to the prominent use of *skill webs* as means of in-project upskilling and a resource for development of inter-professional learning and judgement capability which forms a core ingredient for innovation.

2 Analysing and Interpreting the Upskilling of the Creative Sub-sectors

2.1 Learning and Development in, and for the Creative Sector

Building on both policy trends and empirical observations within the sector in the United Kingdom⁷, Guile (2012b, p. 301) highlights that the creative sector is characterised by:

(a) external labour markets (i.e. contract-based) where employment opportunities emerge as people participate in occupational networks; and (b) cultures and practices that require two forms of knowledge⁸, namely, vocational practice (i.e. mix of knowledge, skill and judgement) and social capital (i.e. knowledge of networks to secure contracts for employment). (Guile 2012b, p. 301)

We would now add that the latter point on social capital, and ‘horizontal network participation’ may well also be required to adequately fulfil the vocational practice elements, especially when the professional is met by interprofessional challenges.

Guile’s study drew on case studies of young people who were

attempting to develop the expertise, connections, and self-promotional skills to gain opportunities to work’ and as a conclusion, suggested ‘that policy makers should rebalance existing educational policies based on the acquisition of the higher level qualifications with policies that assist intermediary organizations (i.e., local bodies) to devise programmes that provide young people with opportunities to develop their vocational practice and social capital and to develop insights into how to deploy the latter entrepreneurially to secure contracts for their services. (Guile 2012b, p. 302)

Moving further to a specific level of *modus-operandi* within the sector, i.e. working in projects and with an interprofessional team, recent research has also highlighted the simultaneous growth and challenges of interprofessional learning (Guile 2012a, pp. 84–86). Interdisciplinary research on learning including contributions from

⁶The earlier stages of the study was reported in (Alyani and Guile 2012). For a full description of the methods and discussions on pragmatically-oriented methodology, refer to Alyani (2016a, b).

⁷For an up-to-date UK sectoral posture see Creative Industries UK 2014.

⁸We draw a similarity here to technological knowledge in the act and process of innovating, viewed as “*at once a body of understanding and a body of practice*” (Nelson 2000, p. 66, 72).

economic geography, placed projects and the features of project-work, centre stage, as a new manifestation of workflow process management. This new workflow could also include pedagogic elements and processes.

Studies in projects, as an organising principle of workflow, depending on intra-company and inter-company arrangements, have highlighted different learning challenges. Commentating and analysing Grabher's study (Grabher 2004), Guile (2012a, pp. 85–86) highlights a few issues, which we quote at length here as it directly relates to our argument later, that:

The primary challenge in the IT industry is to strike a balance between securing one-off ventures, which require bespoke solutions, and repeatable commissions where knowledge about software systems can be 'accumulated' and 'modularised' (i.e. codified) to assist staff to reuse extant knowledge and, in the process, keep costs down (Grabher 2004, p. 107). In contrast, (...) the primary challenge in the advertising industry is having a reputation for devising 'original campaigns' that reflect closely clients' preferences to secure new accounts (Grabher 2004, p. 107). (...) IT project teams consist of different specialisms whereas advertising companies deploy staff to work on the 'client' (i.e. liaison) or the 'company' (i.e. creativity) side of advertising campaigns. The inter-professional challenge of the former is to learn how to 'reduce' (Grabher 2004, p. 108) the differences between specialisms so members of the team can draw on one another's insights to reconfigure extant or create new software. In contrast, the latter challenge is to 'bridge' (Grabher 2004, p. 108) the different foci and concerns that exists between members of the same project team so that they can convince clients of their capability to respond to evolving needs.

It should therefore be relatively clear that the sub-sector specific circumstances and 'project-purpose' requirements, generate slight but significantly different challenges in interprofessional learning for the professional engaged on projects. With the above in mind, we turn next to highlight our case vignette in brief and within that, focus specifically on aspects of interprofessional judgement. At the start of the next sub-section, we will also provide a few definitions for our core terms to assist in the clarification and discussions, later on.

2.2 Sectoral Upskilling for Interprofessional Learning and Judgement in the Digitised Creative Sector

On a most simple conceptual level, interprofessional working, including on and in projects are about professional collaboration. Collaborative efforts bring together experts from different domains, firms and professional bodies/communities to initially frame, and then set about solving a specific problem, and to provide a strategic advantage over single discipline or single firm offerings. Professional collaborations, including in-projects, often start by involving entities that possess different expertise and skill sets. In sum, we collaborate to frame (i.e. ask the appropriate question) and tackle problems which are deemed too large or complex for a single individual, team or firm, and to utilise multiple expertise. The increasing breath, depth and complexity of the creative sector projects now usually requires interprofessional collaborations, with a wide range of complementary skills.

Various definitions of skill abound and yet the term remains stubbornly slippery both in practice and policy domains⁹. We have reinterpreted and recontextualised the concept of ‘skill webs’ (Ashton et al. 2009, 2010) first introduced in exploring the strategies of multinational/transnational corporations (MNC/TNCs), within their knowledge and skill sourcing activities. We have re-applied the concept in the context of small firms, particularly digitised creative sector (such as in NTBFs) which at times, tend to mimic some of MNC/TNCs’ innovative practices around ‘bridging, linking and bonding’, in order to survive and prosper. Small digitised technology firms learn to innovate by connecting and weaving their skill webs, via bridging, linking and bonding (BLB)¹⁰ activities. Additionally, skill webs as a concept is useful in highlighting an analytical and empirical tension on the concept of learning in distributed and project-based activities the firm.

In our re-definition, we have relocated the concept of ‘skill webs’, at a micro and meso level of firm’s operation. Similar to the original usage, we define and employ the concept of ‘skill webs’ as a mean to enable the researchers *“to focus on the ways in which companies chose to generate and use skills and knowledge they require”* (Ashton et al. 2009, p. 329). Whilst Ashton and colleagues deployed the concept at a macro level of ‘skills arbitrage’ processes, we have refined and re-appropriated the concept to in-project resourcing, in smaller firms.

In our empirical observations, we have also used the notion of learning episodes, as a primary unit of analysis within our model, outlined later: they are here defined as *“an occasion in which a (project) team learned something significant that advanced the project”* in line with previous studies (Sole and Edmondson 2002, p. S20). Within the episodes, our attention was directed at identifying circumstances when, where and how an interprofessional project team reaches a ‘break-through’ and/or a ‘cul-de-sac’, falling within the spheres of explorative or exploitative learning spheres.

Exploitation refers to the firm’s refinement and development of existing knowledge with predictable outcomes, whereas exploration refers to the pursuit of new knowledge with uncertain outcomes (1991). We further noted that the nature of interprofessional learning is in the form of generative interactions between individual and collective inquiries (Elkjaer 2004).

As well as ‘collaboration’ activities, previously mentioned, interprofessional interactions and transactions also include ‘coordination and control’. Within our model, we define coordination and control, in line with the literature, broadly as management of processes to enable effective work as well as *managing dependencies between activities*.

⁹In exploring the ‘skill’ in the ‘skill webs’, we remain conscious of its personal and collective dimensions, with productive, expandable and social (PES) features (Green 2011, p. 5, 21, 22; for a fuller argument on the changing dynamics of skill at work see Green 2013).

¹⁰For details and theoretical underpinnings of interprofessional BLB activities, and expansive and contractive features of skill webs, refer to Alyani (2016a, b).

It may be useful to clarify our use of two further terms before outlining the details of the case vignette, and follow-up commentary. These are ‘interprofessional’ and ‘professional judgement’. In line with previous studies, interprofessional (not hyphenated here) in our work,

refers to the way in which people from different occupational specialisms come together to work on common projects and, in the process, learn how to make the implications of their insights and judgements explicit to other members of the team of people they are working with. (Guile 2012a, p. 80)

Defining the terms for professional judgment (and later, interprofessional judgement) may require a bit more time, space and patience. As there is a dearth of studies on interprofessional judgement generally and within the evolving digitised creative sector, we have had to turn selectively to features of two recent studies (Foss and Klein 2012; Ranzilla et al. 2013) in an effort to shed light on the processes at play in the development of the capability for professional judgement in practice, and subsequently, potentially draw comparable insights for our circumstances.

The choice of the two studies above is not random: not only both studies are relatively recent, but they are also complementary. The first is broadly a theoretical study with multi-layered issues of entrepreneuriality in its core and the second, is a practice-based synopsis and recommendation, with its sight set firmly on operationalisation of capability for judgement.

Foss and Kleins’ recent work has advanced an interesting way to explore entrepreneurship activities, building on the underlying theoretical work of Frank H. Knight who emphasised the development of judgement as a core component of entrepreneurship. Their conceptualisation links entrepreneurship with the resource-based theories of the firm and views entrepreneurship as a particular type of action, particularly, the entrepreneurial exercise of judgement regarding the utilisation and use of resources, under conditions of uncertainty. They thus view judgement¹¹ as:

(...) residual, controlling decision-making about resources deployed to achieve some objectives; it is manifest in the actions of individual entrepreneurs; and it cannot be bought and sold on the market, such that its exercise requires the entrepreneur to own and control a firm. (Foss and Klein 2012, p. 78)

As a contrast to the first study’s in-depth theoretical positioning and integration, the second study that we draw on is essentially a synthesis of recent practice and theory, organised and advocated by KPMG auditing and consulting firm (produced together with Brigham Young University faculty), specifically on formation of professional judgement (Ranzilla et al. 2013). Whilst the study is pitched as a practice-based modular compendium for trainees and practitioners, it covers a number of interesting features, especially on operationalisation of professional judgment. Their definition of professional judgement, grounded in their sector, is:

¹¹ It is interesting to note that in some entrepreneurial activities, professionals may have to exercise ‘meta-judgement’, which could be described as “*judgment about other people’s judgment*” (Foss and Klein 2012, p. 216).

The process of reaching a decision or drawing a conclusion where there are a number of possible alternative solutions. (...) (and which) occurs in a setting of uncertainty and risk. (and is) typically exercised in three broad areas: – Evaluation of evidence ... – Estimating probabilities ... – Deciding between options ... (Ranzilla et al. 2013, p. 2)

With those terms covered, we now turn to our case vignette in brief.

2.3 A Case Vignette and a Conceptual Model

As described earlier, our geographical focus remains on the context of Tehran, Jeddah (and Khobar), and Abu Dhabi and Dubai. We have chosen here however to draw mainly on primarily data, in the form of firm-based organisational ethnography, in a highly abridged version of a previous work (Alyani 2016b), set between Tehran and London. Whilst there are, and will clearly be contextual differences, we propose that our model will have enough conceptual insight to apply, with some minor adjustments as necessary, to other locations too.

The case vignette follows a firm, re-labelled here as *AlphaCo*, which was formed as a private small firm within the digitised creative sector in London and Tehran in 2002. Our qualitative longitudinal research design involved five waves (one pilot and four actual) of data collection, covering a period of 10 years between 2004 and 2013, broadly in line with a ‘panel design’, where as far as possible the same people are contacted, observed and/or contacted and interacted with more than once, with the orientation and focal thematic questions mirroring previous research. As an exploratory study, within the Tehran based firm’s context, the account attempts to capture a connected slices of time and place, via the filter of the firm’s activity on technical projects. The organisational ethnographic immersion periods, at the firm and/or attached to related project meetings were:

- Four weeks (December 2003–January 2004) in firm in Tehran (acting as a pilot stage);
- Two weeks (June 2007) in firm in Tehran;
- One week (June 2008) in firm in Tehran;
- Various days accumulating to two weeks (between July and September 2009) in Tehran and one week in accumulated days, between June and September 2010, as case follow-up in London, as well as continued ad-hoc virtual contacts and project-issues’ tracing and tracking in Summer and Autumn 2011, accumulating to one week.
- Various days accumulating to two weeks (between May and September 2013) in final project (*break-throughs* and *cul-de-sacs*) follow-ups, validation meetings and attendance at *Iran Telecom Fair 2013 (the 14th International Exhibition of Telecommunications, Information Technology and Networking* held in late September 2013 at Tehran’s Permanent International Exhibition Centre, in north Tehran) with the firm.

The empirical elements, derived from the five waves, investigated sharing of problem-reframing/-setting and problem-solving project and interprofessional judgement on the issues that emerge out of daily business challenges in projects, which is both of a technical (software) and a commercial (business model and service design) nature. Despite the potential attrition rate, the study longitudinal design strengthens the shortcomings of a single case study and is of particular value when time-critical processes such as learning are observed.

As a small entrepreneurial firm, AlphaCo started out with a few co-founders with technical (software, science and engineering) and business acumens and it initially engaged in testing the market with a range of software services based on the outsourcing model. Examining the market and the rapid changing patterns of mobile handsets, AlphaCo set out to develop a stable platform for business solutions, offered to both the public and private sector primarily in Tehran.

Technically, drawing on the partner in London and *imitating to innovate*, it opted for initially building applications and solutions on a tested ‘common denominator’ of short messaging service (SMS)¹² as an embedded, and till then largely redundant feature (due to lack of popular use and small subscriber numbers mainly interested in core service of voice communication), within the Iranian national Global System for Mobile Communications (GSM) network. It has subsequently moved to cover both SMS and iPhone and Android commercial apps.

Initial software development and testing using Java Platform, Micro Edition (Java ME), previously known as Java 2 Platform, Micro Edition (J2ME), as a Java platform designed for embedded systems (e.g. for mobile devices) were undertaken under local and later distributed scrum¹³. As the mobile telecom market grew in size, the SMS VAS segment grow with it. The full force of mobility, as a ‘service design’ revolution, whilst delayed for about a decade compared to Western Europe and Far East, had at last arrived in Tehran, and with it Iran. With the development of technological tools, digitised creative sector firms such as AlphaCo, and a number of University-Industry based research labs, started to engage in pioneering new service

¹² SMS is generally accepted to have started in the UK in December 1992: available on digital GSM networks allowing text messages of up to 160 characters to be sent and received via the network operator’s message centre to customer’s mobile phone, or from the Internet, using a so-called ‘SMS Gateway’ websites. If the phone is powered off or out of range, messages are stored in the network and are delivered at the next opportunity. The main attraction in Europe has been to send a short message to someone without calling them and low costs. Public and private/corporate SMS services include news, information and transaction, and leisure. It is the introduction and expansion of private and corporate services in Iran (information exchange and transaction) which is the subject of the empirical study, as reported previously (Alyani and Shirzad 2011).

¹³ Scrum methodology refers to an agile and lean-inspired software development model based on multiple small teams working in an intensive and interdependent manner. The term is named for the scrum (or scrummage) formation in rugby, which is used to restart the game after an event that causes play to stop, such as an infringement. Scrum employs real-time decision-making processes based on actual events and information. This requires well-trained and specialised teams capable of self-management, communication and decision-making.

creation in practice, exploring service design and innovation, in Tehran. It should be noted that the study was conducted during a time of unprecedented growth both in the usage of mobile phones and expansion of associated services in Iran (spanning 2004–2013), when and where the mobile penetration rates went from near nothing to over well 115 % and it far exceeds the internet usage and many subscribers started to explore and use their mobile phones as personal and often primary communication device.

With that description covered, we have chosen to outline just one on-going project here, evolving over a number of years, as a vignette. It falls within the mobile banking application and solutions, later rolled out for a number of large Iranian banks. In 2004–2005, it was clear that a move towards ‘internet banking’ in Iran would be slow. Mobile banking (m-banking) as a source of multiple ‘service channel’ concept and tool was thus introduced and promoted by AlphaCo, while exploring innovative service design. Initially built around SMS, and where needed secure and encrypted SMS were utilised, to allow customers to check accounts and transfer, and later pay via SMS into specified accounts – e.g. utilities bills. The solution did not, and still does not require the use of 3G or 3.5G facilities of online banking via smart phones connected to the internet, although now it is offered via 3.5G services too. The firm and developers draw on their project partners in London, in ‘farming’ the problem and then ways to re-think/re-frame the solution. This was partly undertaken by exploring service design using mobile phones, as well as by exploiting the use of SMS interfaces in Farsi (Persian) to make the content more user-friendly for all, and cryptography for mobile communications – encrypted SMS – and ultimately “*bringing everything to the lowest common denominator*” so that any customer with almost any “*relatively new mobile phone models*” (as in 2006–2007) and subscription contracts can still use the higher most level of the service.

The service developers faced major issues in creating ‘generative metaphors’ in problem-setting, to make the banking staff, of either a technical (i.e. Financial Technology – *fintech*¹⁴), audit or marketing/branding background to ‘re-contextualise’ the issues. A break-through was an initial inquiry leading to an agreement to allow a prototyping phase, overseen by a single bank’s Information and Communication Technologies (ICT) departments, to go ahead. Once the prototyping was a success (cutting customer queuing time from an average of 15 min, to conducting most transfers in two to four min), it was quickly taken up as a serious and viable service-channel option. The application was modified over a number of years and has rolled out with many Iranian national and private banks, a number of which are still using an evolved version of the solution.

Essentially, the Tehran and London based team members, as well as the different professionals within the teams, had to find ways to mutually understand and grasp the potential and limitations of service design, given the local conditions. As it was summarised by a team member “*Our learning here is all about ‘beta’: learning and innovation are coupled and yet learning comes first*”.

¹⁴For a brief recent review of the field and uses of fintech see The Economist 2015a, b.

We next turn to our attention to outline our analytical model. Condensing the large project teams activities data by data compression methods, a number of trends became apparent. At the heart of the activities, we noted a range of processes which we labelled as DEAL, as an acronym that stands for the cycle of Design, Execute, Adjust and Learn. Within the DEAL model, various activities were enhanced via formal and informal knowledge brokering and knowledge sourcing, via, in and between projects and firms. A sample series of questions, relating to each problem or inquiry, which are tackled at the different stages include:

- *Design*: What is desirable and viable, and how feasible is it?
- *Execute*: What are the processes involved, and how are they to be undertaken for a smooth (and lean) execution? What is the expected outcome and impact of the processes/artefacts?
- *Adjust*: What worked and what did not, and why? (such as in prototypes)
- *Learn*: What is or remains to be the core problem and cause? How can we frame and reframe to improve continuously? What is the processes and technologies range of tolerance (allowance), before failure?

The cycle in the model continues with framing and reframing of the new problem and inquiry, which then leads to a new design imperative, transforming prototype to archetype, till an adequate and functioning solution is formulated. Brokerages and sourcing may occur initially via formal means (e.g. contractual domains) but are mainly conducted informally, developing a diverse project skill webs, with trust gradually gained in time, by

- Visits to technology fairs and workshops, nationally and internationally;
- Exposure to global/glocal professionals or Research & Development (R&D) networks; and
- Participation in online developers' space on specific technical problems.

The figure below attempts to schematically outline the above description, expanded further below.

As previously outlined, and now outlined in the model, exploitation refers to the refinement and development of existing knowledge with predictable outcomes, whereas exploration refers to the pursuit of new knowledge with uncertain outcomes (March 1991). Additionally, the nature of in-project interprofessional learning is in the form of generative interactions between individual and collective inquiries, whilst engaged on performative learning (i.e. learning that directly derives out of performance), in order to innovate. These are placed on the horizontal and vertical axis of the model's schematic respectively, as outlined in Fig. 5.1.

In the centre of the Fig. 5.1, drawing on the 'learning episodes', we noted the zone of 'collaboration' and 'coordination and control' activities within project tasks, as articulated and facilitated by interprofessional interactions (and in the technical teams' vocabulary, the reflective phases of the cycles of 'Scrums and Sprints').

Thus in formulating the analytical framework, derived from the data and enhanced by the literature, we attempted to ground our observations and theorisation. As no single strand of literature provided the necessary theory, we brought

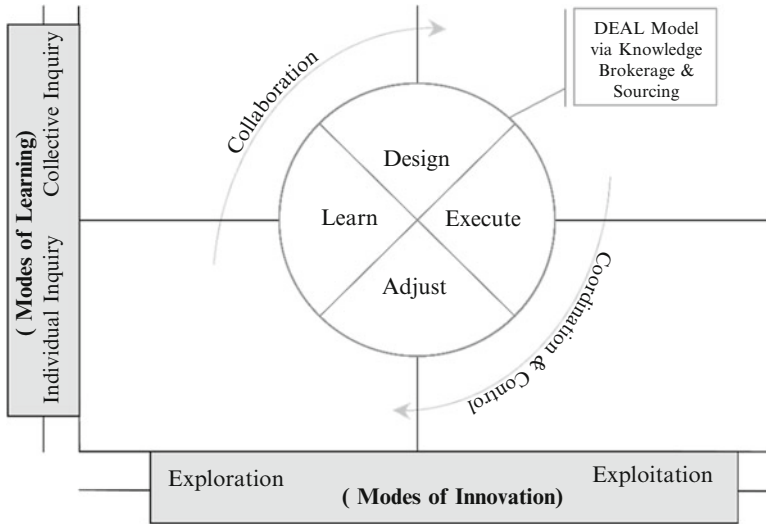


Fig. 5.1 DEAL analytical model: Learning and innovation processes in digitised creative sector projects (Source: author’s own compilation based on Alyani (2016a))

together arguments of several theories and soon traced patterns of cyclical exploitation and exploration, within inquiry-based activities.

The potential output of this work and our model can be summarised in two strands: at a micro level (strand 1), we focus on the strategies that enable the firms to discover, develop and commercialise their digitised technologies (as in the case of the vignette, in the form of telecom VAS software and services). In particular, we have come to consider the importance of the development of interprofessional learning and particularly, interprofessional judgement, in pursuit of innovation, as an important area for attention and further investigation. The goal is to better understand how entrepreneurial digitised creative sector firms, establish and utilise brokerage and intermediation, to build an interdisciplinary, and thus interprofessional capability so as to be more successful at innovation, and pursue the successful commercialisation of their new services and products, and along this journey, further upskill and develop their human talent, as a core asset.

In addition, the introduction of the DEAL (design, execute, adjust, learn) model was a way to identify and unpack non-linear processes, which in situ, draw on interprofessional learning and judgement. This is diagrammatically sketched, in a simplified format, in the below figure (Fig. 5.2).

Whilst all the stages of the DEAL processes draws on skill web, the ‘prototypes to archetypes’ transition phases as outlined above, benefit particularly from the interprofessional judgement and related exchanges. These findings can thus be offered as practical insights at a micro and meso level, to other firms via a potential sectoral ‘platform’ policy.

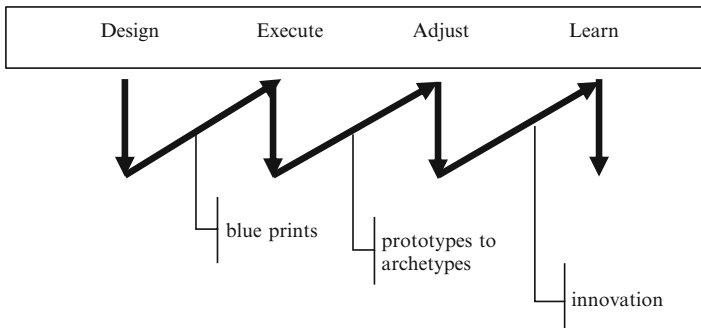


Fig. 5.2 DEAL processes and project stage outcomes (Source: author's own compilation based on Alyani (2016a))

There are also possibly important and interwoven educational implications embedded within the above. Whether in Tehran or elsewhere in the vast higher and technical education system of Iran (and to a fair extent, equally applicable to regional neighbours, such as UAE and KSA's system), there is no longer a shortage on the supply side. A significantly large number of teaching and research universities and training and vocational institutions now operate within the country and the region, with different levels of specialisation and at different stages of quality enhancement. However, a significant challenge for all of them is to enhance their 'university-industry' efforts and relationship, within and between the specialised sectors, and industry and ultimately graduates' job-market. This is so that their curriculum content and pedagogy can be kept relevant and up-to-date. This is no small undertaking in a region that has seen near exponential growth in its higher education in the last two decades.

Whilst similar to 'entrepreneurship', and 'innovation' (as separate undergraduate or graduate school courses and topics), interprofessional learning and judgement cannot be taught, a capability development framework could be facilitated by the way the courses are structured. Insights from our study (and a small but growing literature) are issues that universities, educational institutions and policy-analysts ought to be taking into account, if they are going to sustainably support the need for new forms and models of learning, closer to the practice-based requirements of the workplaces within the specialised and fledgling, yet growing, sectors. Whilst there is an increasing level of policy hype on the emergence of the *Creative Economy* within the region, there also needs to be grassroots and incremental reforms on the practice side.

Equally, the insights from the study's tools and methodology, refined as necessary, could assist in the universities and related institutions knowledge transfer and consultancy activities, to assist in initially unpacking the shortcomings and then upskilling their own staff and their target audiences' LLL efforts. This inquiry-based mode of engagement, based partly on the needs of practice, could potentially further enhance the knowledge transfer in other settings and sectors, so as to support genuine LLL mechanisms, beyond a 'check-list' or a fad. The study's insights on skill

webs processes for example, support knowledge-transfer in different sectors and settings, so this work has a more general argument which is about the necessary ‘architecture’ of LLL in professional settings, particularly through university programmes as a resource to pass-on to others entering into, or operating within practice-based settings.

Coming out of the above primary focus at a micro level of the firm (strand 1), our forthcoming work, at a meso (sectoral and regional) level (strand 2), plans to explore issues around entrepreneuriality and innovation capability development for new sectors, in aid of sustainable ‘decent’ job creation, and related meso level policy and practice interventions.

Drawing from policy studies and economic geography in this strand, we have narrowed our remit in the case vignette to the city of Tehran, although will in near future draw on one or two other regional cities to extend the empirical work (with Abu Dhabi or Dubai, UAE and Jeddah or Khobar, Saudi Arabia, as lead candidate sites). This could be timely for two reasons: firstly, if SMEs enterprises are to develop and play a more important role in the industrial policy and (as part and parcel of value-chains of) foreign direct investment (FDI) policies, the way they enhance their learning and innovation capabilities must be better comprehended. Secondly, this meso level engagement may then provide another avenue to consider the sustainability of the region’s current ‘start-up spring’, on both the north and south side of the Gulf.

3 Concluding Remarks: Digitised Creative Sector Upskilling in Pursuit of Global Interconnections for Quality and Specificity

The nascent digitised creative sector in the Gulf, with its growing interconnections globally, both in terms of policy and practice, is increasingly capturing the attention of the policy makers as a viable vista for new sectors, and with it, potentially new and sustainable private-sector employment creation. Our study has explored this (with longitudinal empirics, at a micro and meso level) and reiterates the importance of practical means to better link academic and TVET programmes and workplace learning, with the practical and evolving needs of the firm.

The current regional efforts, in the form of strategic plans on a policy level, and practical brokerage on a practice-at-firm and -sector level, are welcome moves. Sectoral interconnections, globally and locally, and within the sector, in pursuit of quality and specificity, need to be carefully thought-through with potential unintended consequences identified and addressed, so as to be *implementable* with an enhanced engagement and coordination between key stakeholders (i.e. firms in the private and public sector; education and training providers; and government and other oversight/advisory agencies). Policy design therefore is much more than policy

borrowing, and in practice, policy amnesia should not be allowed to disable and disband policy memory, so as to build on unique national and city contexts.

Our exploration on the formation and cultivation of interprofessional judgement, required for innovation, has led us to foreground the role of facilitating brokerage (i.e. BLB) mechanisms. With innovation remaining high on the economic, sectoral and firm-based agenda, workplace learning mechanisms can contribute to the development of workers' essential performative learning and sector knowledge.

Taken together, these factors point to a move away from relying on the credentialist approaches (ironically both dominant in the Gulf region's societal and educational fabrics, and – till recently at least – highly embedded in various international advisory body's solutions), where qualifications are viewed as a proxy for vocational or professional skills, and towards acknowledging the multi-faceted role of social capital in learning by doing¹⁵, and specific to our argument here, nurturing a transition:

From conceiving learning as consisting of the accumulation of prespecified outcomes to seeing it as the development of judgement. (by undertaking practice-based inquiries, and rehearsing and revising procedures, mid-stream). (Livingstone and Guile 2012, p. 357)

Whilst macro planning and strategy making is an important pre-requisite, it is this gradual firm- and sector-specific capacity building processes¹⁶, at a meso practice and policy level, which will ensure the success of strategies for a fledging sector, with significant regional potential.

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¹⁵For a recent regional articulation of issues see IMF working paper Cherif and Hasanov (2014, p. 12, 24).

¹⁶Paraphrasing Napoleon's insight ("amateurs talk strategy; professionals talk logistics") widely cited in military circles, US analysis now frames the issues more in terms of *amateurs talk strategy; professionals talk capacity* (The Economist 2013b, p. S8). Capacity building for sectoral catch-up and in our specific case, capacity building for talent is thus paramount (Bhargava and Kaabi 2014, p. 23). In time, other new policy ideas, grounded in economic geography and industrial development, such as 'Smart Specialisation' (OECD 2013a) may well lead to policy debates and productive forward steps.

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Chapter 6

Induction of Job Entrants with Midlevel Qualifications: A Comparison of Health Care (HC) and Car Service (CS) in Selected European Countries and South Korea

Marthe Geiben and Philipp Grollmann

Abstract This article presents selected results of the study *Induction of job entrants with midlevel qualification in selected European countries (INDUCT)* that was carried out by the German Federal Institute for Vocational education and Training (BIBB) in co-operation with international partners. In addition to three European countries (DE, UK, ES), the study has been conducted in the Republic of Korea. *INDUCT* analyses the induction process of job entrants in different countries in the field of CS (car mechatronic/car mechanics) and in HC (nursing occupations). Both sectors show a great similarity in the tasks to be fulfilled in the work process across countries. By choosing countries with very different educational systems and labour market organisation, the influence of these factors on work organisation, recruitment and induction of new employees with focus on job entrants can be analysed.

1 Introduction

In times of high youth employment, skills shortage and skill mismatch (for the field of HC, e.g. Bettig et al. 2012; Lauterbach 2012), the data of the study *INDUCT* can provide additional input to different ongoing discussions on these topics.

Through the comparison of countries with different education systems *INDUCT* delivers information on the influence of educational settings on recruitment, induction and training practices. *INDUCT* is an enrichment and an enlargement to previous research (Achtenhagen and Baethge 2007; Achtenhagen et al. 2006) for several reasons. The specific focus on job-entrants to midlevel skilled work is unique as well as the large-scale approach. Most prior research on this topic was either on graduates of Higher Education (Drees 2009) or on single enterprises (Rappe 2006).

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Although there has been some comparable research in the 1980s and early 1990s (Kloas 1988, 1991), there has been no follow up. The project differs from previous comparative research approaches on Vocational Education and Training (VET) systems, as its focus is on the employers' perspective and on establishments. The study analyses qualification needs and the organisational practices of closing the gap between these needs and the competences of graduates of the VET-system. *INDUCT* looks at the *black box* of in-company induction practices.

The *INDUCT* project consists of a feasibility study (INDUCT I 2009–2011; Grollmann and Geiben 2012; Grollmann et al. 2012) and a main study (INDUCT II 2011–2014). Aim of the feasibility study was the creation of a survey instrument to analyse the measures undertaken by employers to close the estimated gap between the educational output and the employer's needs. One goal was to create this item free of *pedagogical jargon* and for an international use. The survey that has been developed and tested in INDUCT I was carried out in the main study (INDUCT II) in a representative stratified sampling. The results presented in this article are based on the data from the main study.

The study and the generated data can also contribute to more practical and political questions in both selected occupational fields: For HC occupations, it can for example highlight the relation between the educational pathway (higher education, e.g. in the UK, vs. vocational education, e.g. in Germany) of persons in HC and the distribution of responsibilities and tasks of HC staff in hospitals, medical centres and other nursing services as well as the process adapting and adjusting to the requirements at the workplace. Furthermore, the study delivers information on how different governmental organisations of the care-sector (e.g. the system of the National Health Service (NHS) in the UK or public 'job listing' in Spain) influence selection mechanisms and access of job entrants to the labour market. A further added value is a potential empirical contribution to the European discussion on the minimum educational level to access the educational pathway in HC (European Commission 2011).

In CS, although the access and the distribution of tasks are less regulated by law, we assume great similarities in products and services. In CS the major task is to maintain and repair cars. Due to standards of car manufacturers and similar client expectations a great deal of commonalities can be expected.

2 Background

2.1 Induction as an Area of Interest for VET-Research

The background of this project is a feasibility study that was carried out between 2009 and 2011.¹ One aim was to research the connection of education system output, the quality of VET and labour market organisation. Induction time, work organisation and development of wages were assumed as variables that are dependent on

¹ Betriebliche Rekrutierung und Karriereentwicklung von Berufsanfängern als Indikator für die Leistungsfähigkeit von Bildungssystemen, Projekt 1.5.302 des BIBB.

the organisation of the vocational education system. In contrast to other research on the output of vocational education, such as the Concept for an international Large-Scale Assessment for Vocational Education and Training *VET-LSA* (Achtenhagen et al. 2006; Nickolaus et al. 2009) or more recently the Comet-project (Rauner et al. 2012), INDUCT is looking at the demand side (employers) instead of the supply-side (competences of graduates). This approach allows us to reflect not only labour market needs but also to analyse employer's strategies to deal with an assumed mismatch of educational output and employer's needs.

2.2 Definitions

Three terms are central for the study: induction, job entrant and midlevel qualification/skills. To understand the study and its aims, it is important to understand these terms.

The first term, *induction*, is not very common. Instead of induction, terms like introduction, orientation, familiarisation, adjustment or onboarding can be found in the literature. In research related to the teaching profession the term "induction" can be found (Britton et al. 2003). With the term 'induction' we refer to the period between recruitment and the moment when a new employee is able to fulfil the demanded tasks autonomously and in a competent way in a given organisation. We assume that this period can take up to two sometimes even three years based on our initial feasibility study. Induction as a process includes the time needed and structured and organised measures as well as other organisational characteristics that may support the new employee in this process.

With *job entrant*, we refer to recruits that have just finished Initial Vocational Education and Training (IVET). Since enterprises often give a temporary contract to their own trainees after the initial training, we also count those persons as job entrants who start working in a new enterprise up to two years after finishing their initial training.

Midlevel qualification/skills is perhaps the most difficult term to define. One possible way to define it is by using statistical classifications such as the International Standard Classification of Education (ISCED) or the International Standard Classification of Occupations (ISCO). An alternative would be the use of qualification frameworks, e.g. the European Qualification Framework (EQF). Another possibility is to look to the tasks, persons with selected qualifications fulfil within an occupational field. In any case, the definition for midlevel qualification will vary according to the occupational field. In our study, we tried to integrate different forms of definitions. As the study is not only taking place in Europe but also in Korea, we decided to use ISCO levels to compare the different qualifications (Tables 6.1, 6.2 and 6.3). On the basis of focussing on ISCO skill levels 2 and 3, we assembled a battery of task descriptions for the respective occupations that we applied in the survey in order to get information on profiles and work organisation in the surveyed establish-

Table 6.1 Educational pathways in health care – nurse assistant

Nurse assistant				
Country	DE	ES	UK	KR
ISCED EQF	3	3b	3b	3b
Years of initial training	1–2	2	1–2	0.5–1
Learning venues	Vocational school/hospitals	Vocational schools (“in-company training” module)	FE College Modern apprenticeships	High School/ Private vocational school
Theoretical knowledge (hrs)	600	70–80 % (i.e. 1400–1600 h)	NA	NA
Practical experience (hrs)	1000	20–30 % (i.e., 400–600 h)	YES	> 780

Source: author’s own compilation

Table 6.2 Educational pathways in health care – qualified nurses

Qualified nurse				
Country	DE	ES	UK	KR
ISCED EQF	5	3a	5	5
Years of initial training	3 (fulltime) 4 (part-time)	2	3–4	3–4
Learning venues	Vocational school/hospitals	Vocational schools (“in-company training” module)	HE	HE/hospital
Theoretical knowledge (hrs)	2100	70–80 % (i.e. 1400–1600 h)	NA	NA
Practical experience (hrs)	2500	20–30 % (i.e., 400–600 h)	YES	1300 (20 credits)

Source: author’s own compilation

ments. Then we looked at the requested qualifications for these occupations in the different countries.

As a result, we selected different qualifications to be focused on: For the case of HC, we chose qualified nurses and nurse assistants, for the field of CS, we chose general car mechanics.

2.3 Methodology

The study is applying a mixed-methods approach, combining qualitative case studies and a standardized survey. First, the project was developed for the use in selected European countries only, and for the field of CS and business administration. It

Table 6.3 Educational pathways in car service

VET in car-service				
Country	DE	ES	UK	KR
ISCED EQF	3b	3b/4b	3b/4b	3b
Occupation/VET programme	KFZ Mecha-troniker	Electromecánica de Vehículos Automoción	Vehicle Maintenance and Repair (variety of programmes)	NA
Years of initial training	3.5	2/3	2/3	0.5–1
Learning venues	Vocational school/Car service establishments	Vocational colleges	FE Colleges Modern apprenticeships	High School/ Private vocational school
School-based instruction	2 days a week	1.5–2 years	Varying	NA
workbased	3 days a week	3–4 months	Varying	3–4 months

Source: author's own compilation

started with an in-depth background on the targeted sectors and vocational education in each of the surveyed countries. Background reports were created for the United Kingdom, Spain, Finland and Germany containing information on the educational system in general, educational pathways, qualifications and the labour market situation in CS and business administration. For the preparation of the survey, an interview guideline with the main topics was developed in order to test the relevance and comprehensibility of the questions for employers in case studies representing a range of establishments (e.g. large and small organisations). These case studies were conducted in all participating countries in both occupational fields. Based on the results, which were summarised in *expert-reports*, a questionnaire was developed and tested with a stratified sampling of 50 cases covering different size classes of establishments per country and occupation. Based on the results of this study, the questionnaire for CS was reviewed and adapted for the main study. INDUCT II started with further literature review, particularly related to the newly included HC occupations. Similar to INDUCT I, case studies were conducted in order to explore the specifics of HC professions. On this basis the survey instrument was developed for health occupations. Following this, interviews were conducted in three countries (Germany, Spain, and UK) and the selected occupations (CS and HC) with a sample size of 1600 cases. A co-operation between the BIBB and the Korean Institute for VET Research (KRIVET) allowed us to conduct the survey also in Korea (additional 603 cases).

3 Data Sampling and Results

3.1 Data Sampling and Gathering

The data was collected during different time periods for CS and HC in Europe. The CS survey was mainly conducted in October and November 2012, the HC survey between November 2012 and February 2013. In Korea the survey for both occupations was conducted in April and May 2014. The aim was to create a representative sampling. A minimum number of 265 cases per country and occupational field was determined. Sectors to be covered were car maintenance enterprises (not production enterprises) and institutions in general HC, i.e., hospitals and private care services with different sizes according to the distribution within a country.

For the field of CS, we see that most establishments are small businesses with up to 50 employees. In Germany, enterprises are more equally distributed across all sizes than in the other countries (Table 6.4).

In Germany, the sampling for HC was divided into two parts, to enable a representative sampling of hospitals as well as private care services which is a growing field in Germany. This explains the more homogenous distribution of enterprises in the German sampling. But also in the total of the sampling we can see the differentiation of types as well (Table 6.5). We assume three main types of establishments: non-stationary care services, medical centres which are rather small establishments (with up to 50 employees) and hospitals with more than 50 employees. Looking to the distribution among all countries, this structure is shown by a nearly equal distribution of the cases among these two groups: 58 % of enterprises in the size groups up to 50 employees (**bold**) and 42 % with more than 50 employees (*italic*).

In the European survey there were two difficulties: for the field of CS, the survey was carried out during a very busy period including the change of wheels and regular inspections. Therefore it took much more attempts and contacts than originally envisaged in order to achieve the desired number of cases and complete interviews. In HC, it was difficult to find interview partners, in general. Often, hospitals refused participation in the study and private care services only had a restricted amount of

Table 6.4 Size of the interviewed enterprises field of CS (by fulltime equivalents (FTE))

	Country								Total	
	<i>1 CS – DE</i>		<i>2 CS – UK</i>		<i>3 CS – ES</i>		<i>5 CS – KR</i>		N	%
	N	%	N	%	N	%	N	%		
1–9	80	7	218	20	223	20	78	7	599	54
10–49	107	10	40	4	44	4	218	20	409	37
50–249	57	5	8	.7	3	.3	4	.4	72	7
≥ 250	21	2	–	–	–	–	1	.1	22	2
Total	265	24	266	24	270	25	301	27	1102	100

Source: Induct II – Patterns of company recruitment and induction processes in selected European countries and Korea

Table 6.5 Size of the interviewed enterprises in the field of HC (by FTE)

	Country								Total	
	HC – DE		HC – UK		HC – ES		HC – KR		N	%
	N	%	N	%	N	%	N	%		
N/A	12	1	54	5	–	–	–	–	66	6
1–9	48	5	150	14	25	2	1	.1	224	21
10–49	79	8	47	5	148	14	111	11	385	37
50–99	33	3	8	.8	61	6	113	11	215	21
100–299	35	3	2	.2	27	3	63	6	127	12
≥ 300	68	7	4	.4	13	1	14	1	99	9
Total	275	26	265	25	274	26	302	29	1116	106

Source: Induct II – Patterns of company recruitment and induction processes in selected European countries and Korea

personnel, involved in the service itself. So it was difficult for them to invest the time needed for the survey. Therefore, the time to gather all cases was extended for the interviewers.

3.2 Selected Results

Looking at the results of the study, the first question is whether enterprises have recruited job entrants in the targeted occupations. Afterwards, the reasons for non-recruitment of job-entrants are analysed. In a next step, we are looking at induction times and the time spent on induction measures.

3.2.1 Recruitment of Job Entrants

Those enterprises who recruited in the last five years (N = 1116 in HC, 1102 in CS) include quite a high amount of enterprises that have not recruited job entrants. In HC, more than 30 % and in CS even more than 60 % did not recruit any job entrant. Nonetheless, there is a relatively high amount of enterprises in which 50 % of new recruits were job entrants: 25.7 % in HC and 10.8 % in CS. There is also a significant amount of enterprises that recruited exclusively job entrants 8.3 % in HC and 14.7 % in CS (Fig. 6.1).

When we look at the differences between the countries within the occupations (Figs. 6.2 and 6.3), we can see, that the amount of enterprises who did not recruit any job entrants in the last five years is the lowest in Germany in both occupations (31.9 % in HC, 51.5 % in CS). At the same time, the amount of enterprises who recruited at least 50 % of job entrants is the highest in Germany (25.4 % in HC, 31.6 % in CS) and Korea (55.6 % in HC, 21.2 % in CS). Surprisingly, the amount of

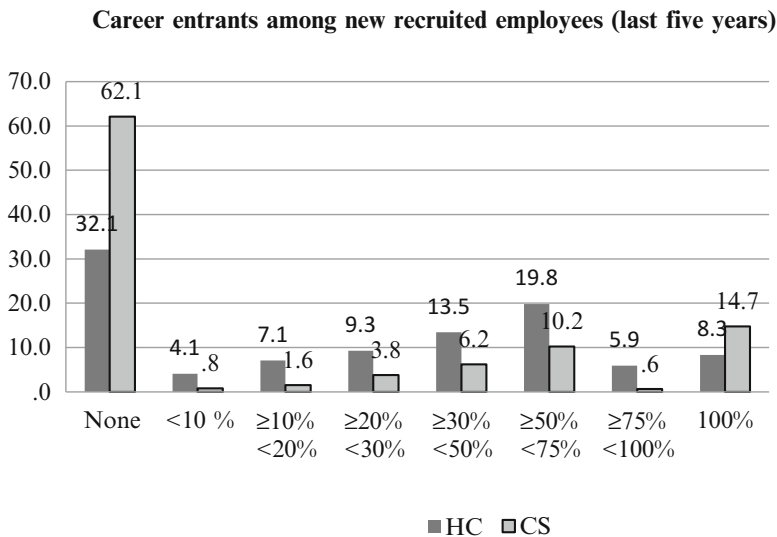


Fig. 6.1 Percentage of recruited job entrants in CS and HC (Source: Induct II – Patterns of company recruitment and induction processes in selected European countries and Korea)

enterprises that recruited exclusively job entrants is the highest in Spain for both occupations (12.1 % in HC, 23.4 % in CS).²

3.2.2 Reasons for Non-recruitment of Job Entrants

We also asked employers about the main reasons for not recruiting job entrants (Figs. 6.4 and 6.5). Here we can see for Germany, that there is a mixture of different reasons, but two important reasons that are appropriate for both occupations: either there were no job entrants applying for an employment or the internal recruitment is the most important source for the employment of job entrants. This reflects the tradition and the relevance of initial training in Germany. In contrast, especially in Spain, we can see that the lack of experience or the long induction time for job entrants are the most relevant reasons. For the field of HC in Spain and the UK, another reason could be the mechanism of public listing for permanent employments that is in use. In CS in the UK there is no clear main reason. Missing applicants and missing competences of job entrants are mentioned most frequently.

Given these reasons it appears logical to look as a next step at two further aspects: the induction times of job entrants and the rate of trainees given an employment after finishing their training. For the question on further employment of trainees,

²Here we assume that special legal arrangements for employing job entrants could lead to this result. As the presented results are out of the analysing process that still is in work, this assumption still has to be checked with the corresponding items.

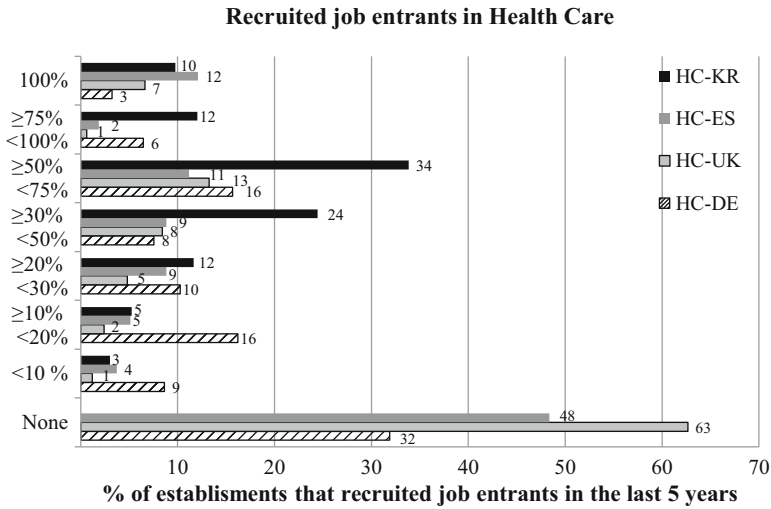


Fig. 6.2 Recruited job entrants in health care (Source: Induct II – Patterns of company recruitment and induction processes in selected European countries and Korea)

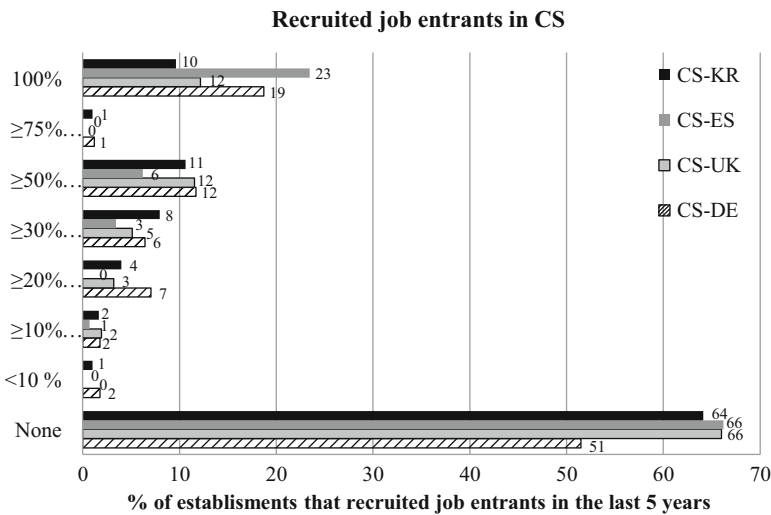


Fig. 6.3 Recruited job entrants in CS (Source: Induct II – Patterns of company recruitment and induction processes in selected European countries and Korea)

only establishments were questioned that had answered before that they train. The rest was excluded by filter.

In HC (Table 6.6), unfortunately, there are no data for the UK. This can be explained by two aspects: First, the training is mostly not linked to a hospital but to training centres at universities. Second, there is a high importance on the recruit-

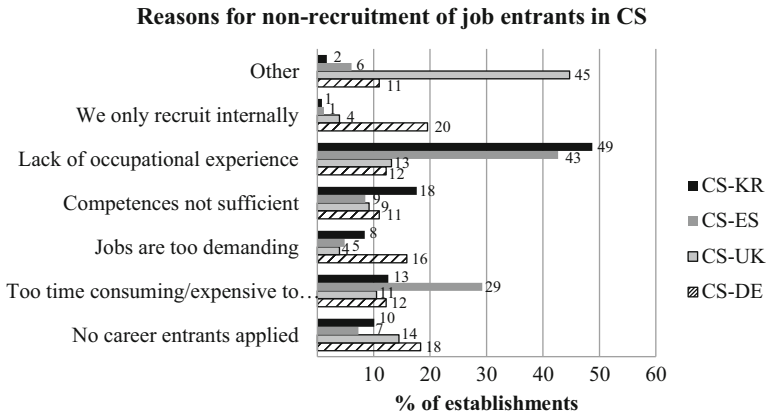


Fig. 6.4 Reasons for non-recruitment of job entrants in CS (Source: Induct II – Patterns of company recruitment and induction processes in selected European countries and Korea)

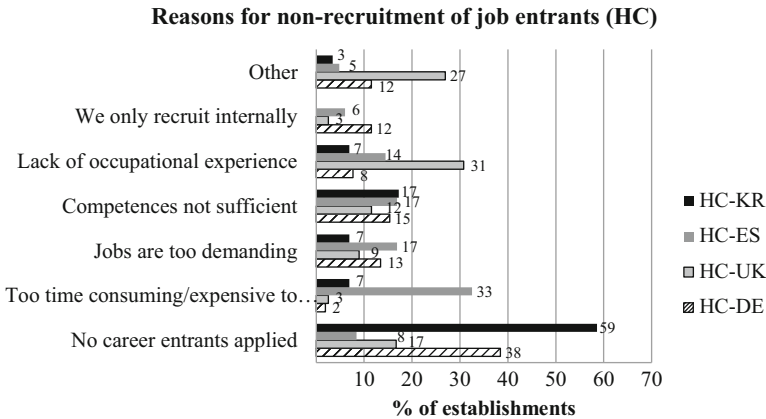


Fig. 6.5 Reasons for non-recruitment of job entrants in HC (Source: Induct II – Patterns of company recruitment and induction processes in selected European countries and Korea)

ment process by the NHS. As the NHS is the most important employer in the field of HC, most recruitment goes through the listing process of the NHS.

In contrast to the 11.5 % of organisations in HC that stated internal recruitment as a significant recruitment channel, it is surprising that we can find a quite high amount of enterprises in Germany stating that they have not employed their trainees after training. The figure in Korea is higher than Germany, 31.5 % of the organisations answer that they have not employed their trainees after training. On the other hand we can see that more than 50 % of the enterprises in Germany have recruited

Table 6.6 Percentage of trainees given an employment after training in HC

	Country								Total	
	1 HC – DE		2 HC – UK		3 HC – ES		5 HC – KR		N	%
	N	%	N	%	N	%	N	%		
na	11	8	248	–	41	29	42	16	342	63
Filter*	124	89	17	–	89	62			230	42
none	25	18	–	–			82	32	107	20
< 10 %	5	4	–	–	29	20	53	20	87	16
≥ 10 % < 20 %	4	3	–	–	32	22	59	23	95	18
≥ 20 % < 30 %	14	10	–	–	32	22	31	12	77	14
≥ 30 % < 50 %	13	9	–	–	25	17	20	8	58	11
≥ 50 % < 75 %	20	14	–	–	18	123	9	4	47	9
≥ 75% < 100 %	14	10	–	–	3	2	1	.4	18	3
100 %	45	32	–	–	5	4	5	2	55	10
Total	275	196	265	–	274	190	302	116	1116	205

Source: Induct II – Patterns of company recruitment and induction processes in selected European countries and Korea

*establishments not involved in training at all

50 % of their trainees at minimum. More than 30 % stated to employ 100 % of their former trainees³. In Spain it's only around 18 % and in Korea even less than 6 %.

For the field of CS, we see a different picture (Table 6.7). In Spain more than 50 % of the enterprises stated that they have retained trainees after their training. This can probably be explained by the fact that the training period is only about three month at the end of the initial training and is rather to be understood as a kind of internship than an internal training.

A quite high amount of enterprises in the UK states to employ 100 % of their trainees. In Germany we find much less enterprises employing their trainees to 100 % but there is quite a high amount at least employing 20–75 % of their trainees. One reason for this result in Germany could be that there is a higher tradition of training above the need of the enterprise (training for the occupation). Apprenticeship might also be used as an extended screening period by the companies.

As mentioned above an important reason for not employing job entrants was that induction is too expensive and/or that job entrants have not the necessary competences, respectively. This should be reflected in the estimated induction times for job entrants. For this question, it is worthwhile to look at different aspects of induction time: induction time in general, and induction time for specific components of work related competences, such as practical occupational knowledge and skills, general knowledge, or aspects like ability to work autonomously or enterprise specific knowledge.

³One reason here could be the inclusion of private HC services in the sample. Those enterprises mostly employ their former trainees. As these are quite small establishments they are not able to train more than their actual need.

Table 6.7 Percentage of trainees given an employment after training in CS

	Country								Total	
	1 CS – DE		2 CS – UK		3 CS – ES		5 CS – KR		N	%
	N	%	N	%	N	%	N	col-%		
na	5	3	1	.9			40	66	46	9
Filter*	62	31	156	143	143	113	200	328	561	113
none	36	18	27	24	66	52	–	–	129	26
<10 %	1	.5	–	–	–	–	1	2	2	.4
≥ 10 % < 20 %	11	5	1	.9	7	6	2	3	21	4
≥ 20 % < 30 %	29	15	2	2	17	13	3	5	51	10
≥ 30 % < 50 %	40	20	11	10	10	8	9	15	70	14
≥ 50 % < 75 %	53	27	18	17	14	11	15	25	100	20
≥ 75 % < 100 %	16	8	1	.9	2	2	1	2	20	4
100 %	12	6	49	45	11	9	30	49	102	21
Total	265	134	266	244	270	213	301	493	1102	223

Source: Induct II – Patterns of company recruitment and induction processes in selected European countries and Korea

*establishments not involved in training at all

3.2.3 Induction Times

The question we asked in order to get information on the induction time in general was: “How long does it take on an average for career entrants to perform their work as well as experienced employees?” (Table 6.8)

In CS our assumption that dual vocational training will reduce induction times was confirmed. For the field of HC, the results were rather surprising: Spanish respondents answered with the shortest induction times, despite the low share of practical experience in nursing education programs (Tables 6.1 and 6.2). In CS, the amount of practical experience correlates negatively with the induction time (Table 6.9). The longer and more structured the practical experience is (the highest in Germany), the shorter is the induction time mentioned by the employers. Not only through that in Germany, induction times of less than one month were mentioned, but also the fact that the amount of employers that mention a very long induction time (more than two years) is the lowest confirm our initial assumptions. In the UK, we also find some statements for very short induction times. This could be due to existing apprenticeship arrangements in the UK.

Even more interesting is the information we have gathered by asking more on the induction times in-depth. Here, we differentiated between different professional skills, enterprise specific knowledge etc. (Tables 6.10, 6.11, 6.12 and 6.13). For general knowledge (e.g. reading, writing, arithmetic etc.) we have not found any interesting differences. However, we found interesting differences with regard to the willingness to learn, enterprise specific knowledge or the capacity to work autonomously. If we take here Germany and Spain as extreme opposites in the ques-

Table 6.8 Induction times for job entrants in HC (general)

	Country								Total	
	<i>HC – DE</i>		<i>HC – UK</i>		<i>HC – ES</i>		<i>HC – KR</i>		N	%
	N	%	N	%	N	%	N	%		
< 1 month	–	–	2	4	7	3	–	–	9	1
≥ 1 month< 2 months	12	5	1	2	32	12	10	4	55	7
≥ 2 months< 4 months	28	12	5	10	49	18	92	33	174	21
≥ 4 months< 6 months	17	7	3	6	62	23	4	1	86	10
≥ 6 months< 1 year	85	37	14	29	53	20	90	32	242	29
≥ 1 year< 2 years	55	24	14	29	47	17	62	22	178	21
≥ 2 years< 3 years	22	10	5	10	8	3	17	6	52	6
≥ 3 years	11	5	5	10	11	4	8	3	35	4
Total	230	100	49	100	269	100	283	101	831	99

Source: Induct II – Patterns of company recruitment and induction processes in selected European countries and Korea

*% is rounded to nearest number. Therefore total in % can be more than 100

Table 6.9 Induction times for job entrants in CS (general)

	Country								Total	
	<i>CS – DE</i>		<i>CS – UK</i>		<i>ES – ES</i>		<i>CS – KR</i>		N	%
	N	%	N	%	N	%	N	%		
< 1 month	15	7	–	–	–	–	–	–	15	2
≥ 1 month< 2 months	1	0	–	–	2	1	–	–	3	0
≥ 2 months< 4 months	6	3	6	13	1	1	–	–	13	2
≥ 4 months< 6 months	4	2	1	2	1	1	–	–	6	1
≥ 6 months< 1 year	38	18	–	–	15	7	4	2	57	8
≥ 1 year< 2 years	63	29	6	13	39	19	37	14	145	20
≥ 2 years< 3 years	41	19	8	17	54	27	59	22	162	22
≥ 3 years	47	22	25	54	90	45	174	64	336	46
Total	215	100	46	99	202	100	274	102	737	101

Source: Induct II – Patterns of company recruitment and induction processes in selected European countries and Korea

*filter is UK-specific (establishments that did not recruit job entrants)

**% is rounded to nearest number. Therefore total in % can be more than 100

tion of practical orientation, we can see for the field of CS, that the induction time is much shorter in Germany. Again we do not only take into account the percentage of answers for the longest induction time but also those for the shortest one. The UK seems at a first glance to have also very short induction times here, but we have to take into account two facts: First, the amount of enterprises that hire job entrants is lower than in the other countries, and second, the missing rate here is very high.⁴ In

⁴This is a problem we faced in many of the UK items in both questionnaires. Enterprises in the UK seem not to be much in favour for surveys and during the discussion at the ECER this was approved by the feedback of participants in the session. We still work on a solution to deal with this fact. At the time, the numbers of the UK questionnaire are only taken as tendency that has to be reviewed.

Table 6.10 Induction times in CS – capacity of autonomous work

	Country								Total	
	CS – DE		CS – UK		CS – ES		CS – KR		N	%
	N	%	N	%	N	%	N	%		
≥ 1 month < 2 months	28	14	4	16	0	0	0	0	32	7
≥ 2 months < 4 months	24	12	2	8	6	6	2	2	34	8
≥ 4 months < 6 months	29	14	1	4	4	4	2	2	36	8
≥ 6 months < 1 year	6	3	0	0	7	7	0	0	13	3
≥ 1 year < 2 years	44	22	1	4	17	18	18	17	80	19
≥ 2 years < 3 years	52	26	11	44	28	29	34	32	125	29
≥ 3 years	18	9	6	24	33	35	53	50	110	26
Total*	201	100	25	100	95	99	105	103	430	100

Source: Induct II – Patterns of company recruitment and induction processes in selected European countries and Korea

*% is rounded to nearest number, so total can differ from 100 %

Table 6.11 Induction times in CS – enterprise specific knowledge

	Country								Total	
	CS – DE		CS – UK		CS – ES		CS – KR		N	%
	N	%	N	%	N	%	N	%		
≥ 1 month < 2 months	0	0	3	11	0	0	0	0	3	1
≥ 2 months < 4 months	36	18	3	11	59	53	5	4	103	22
≥ 4 months < 6 months	33	17	1	4	14	13	4	3	52	11
≥ 6 months < 1 year	2	1	0	0	10	9	0	0	12	3
≥ 1 year < 2 years	59	30	0	0	12	11	16	13	87	19
≥ 2 years < 3 years	51	26	14	50	13	12	49	38	127	27
≥ 3 years	17	9	7	25	4	4	54	42	82	18
Total*	198	101	28	101	112	102	119	100	466	101

Source: Induct II – Patterns of company recruitment and induction processes in selected European countries and Korea

*% is rounded to nearest number, so total can differ from 100 %

Table 6.12 Induction times in HC – theoretical professional knowledge

	Country								Total	
	<i>HC – DE</i>		<i>HC – UK</i>		<i>HC – ES</i>		<i>HC – KR</i>		N	%
	N	%	N	%	N	%	N	%		
< 1 month	16	8	6	13	11	6	35	14	68	910
≥ 1 month < 2 months	12	6	3	7	59	30	29	12	103	15
≥ 2 months < 4 months	31	16	4	9	62	32	36	14	133	19
≥ 4 months < 6 months	2	1	1	2	6	3	38	15	47	7
≥ 6 months < 1 year	63	32	8	17	36	19	49	19	156	23
≥ 1 year < 2 years	49	25	13	28	17	9	43	17	122	18
≥ 2 years < 3 years	14	7	5	11	3	2	14	6	36	5
≥ 3 years	10	5	6	13	1	.5	9	4	26	4
Total*	197	100	46	100	195	102	253	101	691	1001

Source: Induct II – Patterns of company recruitment and induction processes in selected European countries and Korea

*% is rounded to nearest number. Therefore total in % can be more than 100

Table 6.13 Induction times in HC – autonomous work

	Country								Total	
	<i>HC – DE</i>		<i>HC – UK</i>		<i>HC – ES</i>		<i>HC – KR</i>		N	
	N	%	N	%	N	%	N	%		
< 1 month	15	7	4	10	7	6	33	12	59	9
≥ 1 month < 2 months	51	24	5	12	24	2	75	27	155	24
≥ 2 months < 4 months	41	19	8	19	8	7	45	16	102	16
≥ 4 months < 6 months	11	5	–	–	45	38	10	4	66	10
≥ 6 months < 1 year	72	33	6	14	28	24	58	21	164	25
≥ 1 year < 2 years	17	8	14	33	6	5	33	12	70	11
≥ 2 years < 3 years	4	2	3	7	–	–	13	5	20	3
≥ 3 years	3	1	2	5	–	–	11	4	16	3
Total*	214	99	25	59	397	794	278	101	652	101

Source: Induct II – Patterns of company recruitment and induction processes in selected European countries and Korea

*% is rounded to nearest number. Therefore total in % can be more than 100

the case of enterprise specific knowledge, Spain has a surprisingly high amount of enterprises responding very short induction times. One possible reason therefor could be the fact that in Spain the average size of enterprises in CS is rather small and in smaller enterprises there are less enterprise specific aspects to learn. Another possible reason could be that there is a high amount of recruited job entrants that already know the enterprise through the internship at the end of the training program.

In contrast, we can see in HC that the induction times in Germany are estimated to be longer than in the other countries. Especially for the cases of the theoretical professional knowledge, we assume that this is due to the fact that Germany is the only country where the education of nurses is not related to higher education institutes and therefore the educational level in Germany is lower by starting the first job than in Spain, the UK or Korea. In the UK, the high induction time until the person is capable to work autonomously can be explained by the fact that a nurse from day one after their studies is responsible for a team of nurse assistants and therefore mostly undergoes a structured mentoring program (on-the-job).

3.2.4 Time Spent on Induction Measures

In addition to direct induction times, we also looked at other indirect indicators. For example we asked for variety of measures that enterprises and organisations could use in order to support new employees. Afterwards we asked the respondents how much time the companies invest into these measures. Here, we asked the companies to differentiate their responses between job entrants and experienced recruits. For this indirect measure, we assume again that the occupational experience incorporated into initial VET and work organisation could play a crucial role. In Table 6.14 we can see e.g. for the case of HC in Germany and Korea, that the difference between the times for induction measures for new employees with and without prior experience is much higher in Korea than in Germany. Again we suppose that this deals with the different IVET programmes.

4 Summary of the Results

Although the results are still descriptive at the moment, first tendencies are already visible. We can see e.g., that the willingness to recruit job entrants is higher in countries with a tradition of initial training that is more practical oriented than in countries with a more school based initial training. Furthermore, we can see a significant difference as regards to the main reasons why companies would not recruit job entrants. In countries with school-based vocational education programmes a long and expensive induction period and missing competences of job entrants are stated as the major reasons, in countries with work based settings the main reason is rather

Table 6.14 Differences in times in measures spent for induction of new employees with work experience and job entrants

Germany			in hours	Korea		
N	valid N	Mean	size (FTE)	N	valid N	Mean
48	35	103.0	1–9	1	1	.0
79	57	87.6	10–49	111	89	68.5
33	23	128.6	50–99	113	101	76.5
35	23	42.1	100–299	63	52	67.2
68	40	67.5	300+	14	13	125.6
263	178	85.5	Total	302	256	74.0

Source: Induct II – Patterns of company recruitment and induction processes in selected European countries and Korea

the lack of applications of job entrants in combination with a high importance of internal recruitment.

In HC where the educational settings are more similar in terms of their practical component this difference cannot be shown, accordingly. However, we can see that the difference of the time invested into induction measures for job entrants and new employees with prior experience is lower in Germany than for example in Korea. The differentiation of induction times according to different aspects of competence (e.g. ‘theoretical occupational knowledge’ or ‘autonomous work’) highlights the different patterns of organising nursing education and work. It shows that each of the patterns is a solution in its own right questioning European attempts to standardise the minimum educational level.

Especially in the field of CS we can see that for German companies it is rather usual to retain trainees (apprentices) as opposed to the other countries. In contrast, for the field of HC, internal recruitment plays an important role not only in Germany but also in Spain and in Korea. Especially in Spain, we assume that the three months internship at the end of the IVET period helps to smoothen the transition from school to work.

But another aspect here could also be that these contracts are often not permanent. In Spain it is necessary to go through a national listing process to get a permanent employment in national hospitals. Another explanation for that high amount of enterprises (hospitals) providing employment to former trainee nurses could be the fact that due to a relatively high regulation of the educational pathways and the access to employment in the field of HC, there should be a better fitting of number of trainee nurses and vacancies in the labour market.

In that sense recruitment pathways are strongly shaped through the respective different governmental organisations of the care-sector (e.g. the system of the NHS in the UK or public ‘job listing’ in Spain) that influence selection mechanisms and access of job entrants to the nursing labour market.

5 Conclusion and Outlook

We can see that there are differences in the induction time. But it seems not as easy to explain them as initially assumed. They are due to a complex combination of labour market and educational settings. As the presented results only are the beginning of our analysis, we still have a lot of possible interactions that need to be tested and controlled. Especially the influence of the size of the enterprises is an important aspect that has to be controlled. First analyses show that this is a very important influence too, but we also see that this is not the only reason for differences between the cases.

Two very interesting sets of items still are open for future analyses: First we asked for the distribution of tasks and responsibilities. This could be interesting in CS to compare the degree of hierarchical organisation and the division between horizontal work tasks. Our initial analyses of work organisation in the car-service sector strongly questions our initial assumption of a sector structured largely through standards of car-manufacturers and shows great diversity between different countries.

In HC an interesting aspect here is to compare the influence of the different educational settings and responsibilities: do nurses with a higher education qualification have different tasks and responsibilities than those with a VET qualification?

We have also collected data on wages and their development. Here we have to be aware that this is very sensitive data and that we do have to deal with a relatively high amount of missing data. Nevertheless, these data could show in a quite objective way the different steps in the career development of job entrants.

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Chapter 7

Apprenticeship Policies Coping with the Crisis: A Comparison of Austria with Germany and Switzerland

Lorenz Lassnigg

Abstract The paper asks how the three countries have retained their low level of youth unemployment through the crisis. An institutional approach is taken, criticizing simplistic ideas on how collective skills systems manage the low level of youth unemployment. The analysis starts with Austria, and compares this experience to the other cases. Comparative statistics are used to describe the way of the three countries through the time period 2004 to 2012. In Austria a main component of managing the low level of youth unemployment is a very strong tradition of youth labour market policy (LMP); the apprenticeship system itself has also been supported quite strongly by LMP for decades. Thus, not the apprenticeship system itself, but rather the employment status of apprentices that has included them into social security and thus into LMP seems the main reason of retaining the low level of youth unemployment. The comparison takes three steps: First the features of the apprenticeship (or ‘dual’ or ‘trial’) systems are analysed, showing that Austrian Vocational education and training (VET) is much more diverse with apprenticeship homogeneously situated at the lower end; second OECD LMP statistics show a higher intensity and more concentration on apprentices in Austria, pointing to different patterns for explanation; third labour market figures and policies indicate a more severe situation in Germany, which was quite successfully brought down after the crisis. Overall, apprenticeship appears quite diverse, as are the policy approaches, and it is certainly not an ‘easy fix’ for problems on the youth labour market.

1 Background and Strategy for Analysis

The research undertaken for this paper started with a sequence of analyses of the conditions and development on the Austrian youth labour market, and was extended to the comparative analysis of Austria, Germany, and Switzerland. This guides to

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some extent the analysis, as the findings and explanations about Austria serve as an initial point of reference. So the question is, whether explanations put forward for the Austrian patterns might be generalized to the other countries or systems - this perspective is more specific, and also different from a kind of comparison that would start with an overall theoretical or explanatory framework, and test some general hypotheses. Nevertheless, the analysis starts from some more general theoretical assumptions, mainly based on institutional approaches (Busemeyer and Trampusch 2011), which constitute the direction of the research questions: First, it has been recently shown that there are quite huge differences between systems that are deemed very similar in the political and scientific discourses, i.e. between the 'collective skills systems' of countries that build their 'skills formation' substantially on versions of apprenticeship training (even if branded differently, i.e., the famous German 'Dual System' that explicitly has refused to call the apprentices 'apprentices'). Second, it has been argued convincingly that the emergence and working of these systems cannot be explained sufficiently by (simple) market economic or rational choice assumptions, but one should take into account the complex constellations and interactions of the actors involved who are embedded in differently shaped patterns of institutional frameworks, i.e. institutional and political structures and processes. Consequently it must be expected that these constellations also play a role in how the transition process from education to employment is shaped in different contexts. Indeed, there are very demanding and complex arguments in institutional political economy to explain the interplay of skill formation and employment (Busemeyer and Iversen 2011), a main point being that the industrial relations must be considered. In fact it is not clear, to which the two are separable, or to which degree skill formation is an inseparable part of the employment relation, which might work differently in different configurations. This paper will not venture deeper in these theoretical questions, but tries to contribute some empirical observations based on quantitative secondary statistics. In particular attention is given to social security and LMP as parts of industrial relations.

The employment relation and the industrial relations might be essential with two respects: First, if apprenticeship is based on an employment contract, apprentices are counted as employed in the statistics, so the positive relationship is to some extent tautological; second, the employment relation is a basis for inclusion and generation of social security entitlements, with somewhat contradictory effects, as the entitlement for unemployment benefits might lead to a positive relationship between apprenticeship and unemployment, on the other hand this also creates a channel into LMP, which at least statistically leads to a reduction of unemployment. The evaluations and econometric studies, in particular on an aggregate level, often do not make clear, whether apprentices are also classified as employed on the other side of the equation.¹

¹ This aspect seems unclear in an EU-study about the impact of apprenticeship, in which the authors do not consider this relationship. They show and interpret correlations between incidence of apprenticeship and employment, unemployment, and rates of young people neither in education nor employment (NEETs), and per country. The results are completely dominated by the three

From the perspective on the Austrian discourses about the youth labour market, in which the author participates already since decades, there appears a certain contradiction to the mainstream opinions about the relationship between apprenticeship and youth transitions: Whereas expectations widely prevail that there might be a kind of ‘natural’ linkage that serves for a smooth transition into employment via apprenticeships, the Austrian discourses at least are since the 1980s highly focused on how the problems on the youth labour market can be alleviated by political interventions. Why, if there is this ‘natural’ relationship, is there so much political attention to this? Taking this question further, we may ask: How might the conditions on the youth labour market be influenced by this political attention? How much might politics and policies influence the performance on the youth labour market and the frameworks of transition? It seems forgotten or underplayed in the contemporary debates, that the demand for apprentices has always been related to the demand for labour, and thus to the economic cycle, leading to a decline of access at the same time as general unemployment is rising.² This linkage on the one hand might heavily contribute to the employment prospects, but on the other hand would also determine access to apprenticeship according to the demand for labour. So access to apprenticeship would be an ‘economic good’ rather than a publicly supported right, which would constitute a distinction between apprenticeship and public vocational schooling.

The expectation concerning the ‘natural’ relation between incidence of apprenticeship and low youth unemployment is easily contradicted by looking at the labour market statistics. Only some of the countries using apprenticeship as a substantial part of vocational education are situated on the lower end of the range of youth unemployment in Europe or the OECD. Steedman (2012) has classified countries according to their use of apprenticeship, and we can easily see that the incidence of youth unemployment varies widely among the countries using apprenticeship substantially. The three countries of interest here, and the two others included in the Busemeyer and Trampusch (2011) volume are clearly at the lower end; however there are also four other countries which were classified as using apprenticeship which show medium or high youth unemployment. So Steedman (2012, Sect. 1) explicitly rejects the idea to build on the expected ‘natural’ relationship.

While a positive relationship between apprenticeship and low youth unemployment can be observed over time, it would be misguided to see apprenticeship primarily as a ‘cure’ for high youth unemployment (...) it is not a sufficient solution to

countries Austria, Germany and Denmark (it’s only about EU, so Switzerland is not included); and the NEETs indicator – which is less related to employment – shows the least robust results (ECORYS, IES, IRS 2013).

²The analysis of effects of the economic cycle would need rather longer data series to be independent from specific conditions; most available analyses use time spans since the mid-1980s which are somehow driven by the exceptional baby boomers from the 1960s, which came to apprenticeship at the same time with the economic turbulences of the early 1980s, so the analyses get stronger effects from demography than from the economic cycle, and some tend to downplay the latter (see estimations by Mühlemann et al. 2009; Müller and Schweri 2006 for Switzerland; Stöger and Winter-Ebmer 2001 for Austria; Baldi et al. 2014; Troltsch and Walden 2010 for Germany).

improving the labour market transition of young people with poor school achievements or other disadvantages.

There must be additional conditions in apprenticeship that bring about the smooth transition. Interestingly, the mainstream discussion does not reflect high interest into these specific conditions. The attempts to push apprenticeship politically at the EU (CEDEFOP 2014) and OECD (2012a) level, or to sell it on the education market (BMBF 2014), rather take another way of argument. It is agreed that apprenticeships are highly complex frameworks comprising many different factors, among them the close relationship to the employment relation and experience has also clearly shown that attempts to ‘export’ or implement the whole system do not work. So a kind of assemblage approach is taken that identifies many elements or factors, and proposes to try some of these, hoping that the positive outcomes will somehow evolve. The approach is not to identify the key factors, and propose to use these, but rather to use a kind of abstract expression of apprenticeship, and to transfer more or less eclectically some elements that seem interesting to buyers or receivers.

As Austria, Germany and Switzerland are not only commonly at the lower end of youth unemployment, but seem to belong also to a common cultural context, it seems justified to assume a high degree of similarities among them, and to seek among these for an explanation. A closer look discloses also huge differences among them, not only concerning the political and economic structures and positioning, but also concerning the apprenticeship systems themselves, as to the way they developed, and are structured. To compare these whole contexts and frameworks would also be beyond this chapter, but must be kept in mind.

Bringing the topic down to an observational level that can be illuminated by the kind of data available and used, the analysis takes the following strategy. First the development in Austria is summarised from the previous studies and the conclusions are formulated as hypotheses to be challenged by data from the other two countries; second, some indications about the context, in particular differences in the participation in apprenticeship are summarised; third the comparisons are displayed, using in particular two dimensions (i) whether youth unemployment is really lower in comparative terms than general (adult) unemployment, (ii) whether the LMP data indicate a relatively increased use of these measures in the compared countries.

2 Basic Framework and Analysis of Austrian Development

The overall question is, how Austria, compared to Germany and Switzerland came through the recent crisis so far by maintaining the comparatively low levels of youth unemployment; this might also give some more general hints about how certain apprenticeship systems are related to low youth unemployment. Theoretically the analysis is using an institutional approach due to the political economy of collective skills systems, based on historical institutionalism (Busemeyer and Trampusch 2011). This approach extends the reasoning beyond a (simple) rational choice and market economic logic, including institutional structures and processes (e.g.

patterns of firm involvement; intermediary actors; certification, institutional change) as well as political structures and processes (e.g. the struggles about who controls, provides, pays for skills formation, and the power relations between employers and employees, and the existing structures of representation). Important aspects in this concept are contingencies and continuous struggles leading to dynamic states and periods of stabilisation and destabilisation; therefore the approach does not assume stable (generalised) structures within which decisions are taken, but expects substantial differences between systems of a similar kind and also dynamics/changes in those systems. An important element of this institutional approach is that it considers also the industrial relations, i.e. the compressed wage structure in coordinated market economies. This chapter gives particular attention to social security and LMP as parts of industrial relations.

On this theoretical background we can assume that the relationship of apprenticeship to employment is part of the political struggles and the dynamic outcomes of these, and not only a 'technical' issue as dealt with from a market economic or rational choice perspective. Asking, how this relationship might be build up and maintained we must consider first the structural issues, and second the contingencies which might result from the various dynamics included.

2.1 Apprenticeship and Employment: Key Ingredients

If we look at the current political and research based debates about apprenticeship, and its political or policy transfer we see that there is no consensus about the key ingredients of apprenticeship. There is high consensus about the complexity of existing systems, and the difficulty of transfer, which has mostly failed so far. However, there seem to be mainly two basic approaches of how the key ingredients are modelled (see the discussions in ECORYS et al. 2013 about the definitional issues, and the chapters about apprenticeship in Maurer and Gonon 2014).

- One is more holistic, and takes the employment contract between an enterprise and the apprentice (or his representatives) as the core and necessary element, several other ingredients are important, but if the core one is not fulfilled, apprenticeship does not prevail; this approach is focused on work, and has a clear linkage to the economic reasoning about employment decisions, etc.
- The other takes the element of work based learning as the core, and is also more of an assemblage type concerning the ingredients, with a kind of contractual relationship also included, however, mainly about learning issues, and which might also be concluded between schools/educational institutions and enterprise(s); this approach is focused on skill formation and pedagogical issues, and the amount of work based learning might widely differ in this approach, from some weeks to a substantial proportion (Wieland 2013).

2.1.1 The Austrian Institutional Structure/Dynamic and a Critical Junction in the 1980s

The main thesis based on the Austrian development related to the maintenance of low youth unemployment is that the outstanding factors are not qualification/learning but employment/working. The linkage is established through three interrelated aspects, (i) the employment contract that includes a collectively bargained training allowance compensating for the lower productivity of apprentices' work; (ii) the inclusion into the social security system, in particular constituting the entitlement for unemployment insurance; (iii) the employment related attention to apprentices from LMP, with a rather low attention from the side of education.

Given these three linkages, the chain employment-social security-LMP includes an important element of scale, as apprenticeship affecting a comparatively small target group is included in a much larger system of LMP; because of the sheer demographic numbers of much fewer young people than adults the potential (gross) impact of LMP to reduce youth unemployment is relatively increased (a huge budget for young people is small in relation to the overall LMP budget, so one could say that from the overall budget one EUR devoted to youth affects much fewer persons than one EUR devoted to adults, and thus it might also be politically easier to find those EURs for youth).³

An additional element in this chain is given by the fact that the employment relation of apprentices has constituted the full institutionalisation of the apprenticeship market as a specific sector of the labour market, which is handled in a homologous way to the overall labour market and which is also specifically documented and monitored statistically. Thus there are monthly figures reported of supply and demand, and of course the unemployment ratio on the apprenticeship market, etc.

In sum, this institutional structure of apprenticeship constitutes more options for (at least formal) inclusion of young people into employment and/or education than school based structures alone: in addition to the option of school education there are the additional options of employment/apprenticeship and of LMP-measures; the latter pose many additional questions, however, in a first instance, they reduce youth unemployment measured by the established indicators. From this argument the question arises which weight the LMP-measures carry in reducing youth unemployment.

In sum, from this institutional trait we can infer that the main reasons for lower youth unemployment are not related to the educational side of apprenticeship but are rather related to the inclusion of the apprentices (and thus potentially of young people throughout) into the employment regulations and the and social security system.

³A similar argument of scale was used in the analysis of British higher education, when the budget responsibility for universities was shifted from the Ministry of Finance where it was a relatively negligible proportion of the whole budget, to a specific Ministry, where the same sum had to compete with all the other Ministries, and has consequently been put under much more scrutiny.

So far the basic institutional structures have been described. The institutional approach also considers the political dynamics, and the constellations among the various actors in the realm of the state as well of the employees' and the employers' representatives. Here the specificity exists that the enterprise part of the apprenticeship system is under the responsibility of the Ministry of Economic Affairs which gives also a strong influence to the social partners, and the part time compulsory school part of apprentices is under the responsibility of the Ministry of Education, whereas LMP is under the responsibility of the Ministry of Social Affairs/Labour.⁴ This structure of divided responsibilities can be seen as a source of coordination problems, as well as it can be a source of institutional complementarities. A closer look gives indications for both. On the one hand, overall education and training policy cannot be managed according to a kind of overall comprehensive plan; rather the different parts develop according to their own paths. On the other hand, with respect to problems on the youth labour market, institutional complementarities prevail, as the different actors contribute from their specific potentials to solutions. As the institutional structure is also related in a specific way to the political actors, their competition patterns also point rather towards solutions of the problems than to distortions, or coordination problems.

Basically, as a result of the institutional structure we can speak of a transitional space that comprises three sectors for access of young people: (i) full-time schools, (ii) apprenticeship (iii) LMP-measures. Three different Ministries as actors of the state are responsible for these, each for one sector. In addition the social partners are involved particularly through apprenticeship and LMP (where they are governing the public employment service to which LMP is devolved). A traditionally established relationship to the political parties and the organisations of employers and employees also contributes to solutions. Within the governance of apprenticeship main responsibilities are delegated to the economic chambers, creating an imbalance to the employees' organisations, which are inclined to put special scrutiny to the social components of apprenticeship. Moreover, as long as the (past) main political parties have constituted coalition governments the Christian-democratic Österreichische Volkspartei (ÖVP) dominated the employers' side of the social partners and have staffed the Ministry of Economic Affairs, whereas the Socialdemocratic Party (SPÖ) dominated the employees' side of social partners and staffed the Ministry of Social Affairs/Labour. In this constellation the social as well as the economic interests are well represented, and the competition serves that each force guards the other for not compromising the conflicting goals and objectives.

In this constellation an additional factor comes to bearing, which concerns a clear political priority given to the alleviation of problems of youth unemployment. This priority can be clearly traced back to the early 1980s, when the economic turbulences of these times reached Austria, and unemployment started to rise. In the mid-1980s a specific constellation met the youth labour market, as the extraordinary large birth cohorts from the 'baby-boom' years met coincidentally a difficult economic

⁴The specific names and constructions of these Ministries have varied over time, so we use here the basic functional expressions which hold over time.

situation; this constellation concerns many countries, however, often unemployment has started to rise earlier, so it might not have been so clearly visible. In this period the first political programmes to fight youth unemployment were launched, and the political attention has constantly been held up since then for now three decades. The basic structure of policies has built on these early programmes, and has been further developed and extended. From the beginning the support of apprenticeship has been a main part of these measures, based on the observation, that with economic downturns the demand for apprentices has gone down. In terms of historical institutionalism we could term this period of the early 1980s as a critical junction, where a kind of basic decision was taken, to hold youth unemployment down, and to make this also to a main object of political competition and benchmark, so as to hold attention to it over time.

In short the Austrian constellation can be summarised by the following points:

- Apprenticeship as a form of the employment relation,
- Creates specific formalised employment positions (contract), and
- A specific sector of the labour market, that is regularly observed, monitored and reported,
- Creates inclusion into social security and LMP, and
- Becomes a target of concentrated LMP-measures,
- The apprenticeship market gets also into political monitoring,
- With the figures of supply/demand becoming a constantly attended political object/target.

This framework gives a strong weight to the political level, whereas evaluations of policies often give very moderate or negligible results. It must be mentioned that different aspects are concerned in the argument taken, as compared to the specific evaluation problems. The argument is about a longer term pathway, which has no easy counterfactual, as the proposition is that at a critical juncture a basic path was constituted to hold youth unemployment down, which could serve as a basic floor at later challenging points in time, because the scale of the problem has remained manageable. In this path, evaluations of specific measures could give – and in fact also have given – weak results; nevertheless holding substantial proportions of young people in measures has firstly helped to hold the unemployment figures down (as measures are expensive, this is only possible if the figures are not too high), and has secondly also to some degree helped young people with their transition. This argument should not be considered cynical, as – even if we do not know so much which measures are really optimally effective, it seems better to give a try by some treatment with uncertain results than to let young people completely being on their own. Actual statistics show that in Austria there are comparatively few long-term unemployed young people, because every person has to be transferred to a measure before reaching the threshold of three months duration (besides, this also holds

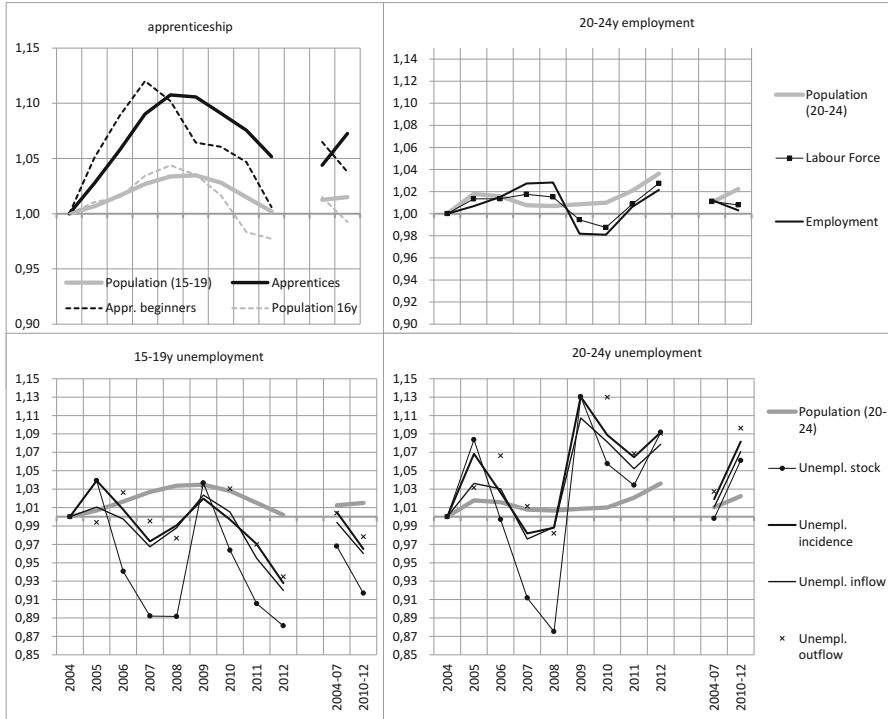


Fig. 7.1 Apprenticeship/Employment and Unemployment. Movement of 15–19 years and 20–24 years Cohorts through 2004–2012 Period in Austria (Source: author’s own compilation)

down unemployment, because duration is a main factor of increasing it).⁵ We will also show that some measures are quite creative and promising.

2.1.2 The Way Through the 2008 Crisis on the Austrian Youth Labour Market

To exemplify the framework above, we can first identify the main structures of the Austrian policies in the three sectors of school, apprenticeship and LMP, and will then look at the way the young people took through the different sectors during the period shortly before and after the crisis (displayed in Fig. 7.1).

⁵ In 2014 the proportion of persons (incidence) unemployed longer than 180 days averaged at two percent below 20 years and at four percent in the 20-24 years age group, as compared to 24 percent among all unemployed persons (see statistics of Public Employment Service, Sect. Long-term Unemployed. http://www.ams.at/_docs/001_jb2014.pdf). Some years ago the proportion was even reported at zero.

- In school sufficient places are available, and the specific construction at the compulsory-post-compulsory edge that has included the first year of post-compulsory (mainly vocational) schools as the last year within compulsory schooling, provides strong incentives to start a post-compulsory career; in addition the medium level vocational schools which have some problems of competition provide much support to their students (partly under measures to fight early school leaving).
- In apprenticeship, which starts after compulsory schooling, one year later than full-time post-compulsory schools, several supporting measures have been provided during the previous decades, including on the hand institutional changes that have increased the available paths of apprenticeship and have reduced regulatory ‘burdens’ on enterprises (in particular loosened the lay-off restrictions in the beginning), and on the other hand providing financial incentives of many kinds for taking up additional apprentices, or to start new apprenticeships. The latter are organised as part of LMP, and there have been regions in Austria where already in the 1980s about one fourth of apprentices were supported by this kind of measures.
- LMP provides meanwhile a wide system of measures of very different kinds, from short term counselling through vocational or key competences courses to production schools, and – developed through about one decade – also a programme of institutional apprenticeship giving full credentials and trying to find a transition into an enterprise based apprenticeship through internships as quickly as possible.⁶

Based on the figures of the various statistical bases we can try to reconstruct, how the young people moved through the three sectors during the period 2004–2011 (Figs. 7.1 and 7.2). The observation is based on the main statistical data bases (LMP-data warehouse, and education statistics by Statistics Austria), which provide the full population that is further distinguished to the younger 15–19 years old and the older 20–24 years old age group.⁷

Basically we can see a different demographic pattern in the age groups with an increasing pressure during the crisis among the younger, and a decreasing pressure in the older age group. Youth unemployment started at a relatively high level in the observation period, went down before the crisis, increased sharply in 2009, and decreased again subsequently. The younger and the older age groups differ by a much higher remaining level of unemployment after the crisis in the older age group; this is reflected also in a decrease of employment during 2008–2010. Access to apprenticeship shows a sharp increase until 2007–2008 (+ about 10 %) and then

⁶This programme can be seen as a real alternative to the German ‘Übergangssystem’, as it provides a full apprenticeship status, with a slightly lower ‘wage’ paid from the unemployment insurance, and full inclusion into social security, and potentially can also be used during the full period of apprenticeship.

⁷The one percent-sample based data from the Labour Force Survey or the Micro-Census are based on quite small absolute sample sizes, and can be used only in a limited way for the analysis of youth because of high error margins for subgroups (this applies also for other small countries).

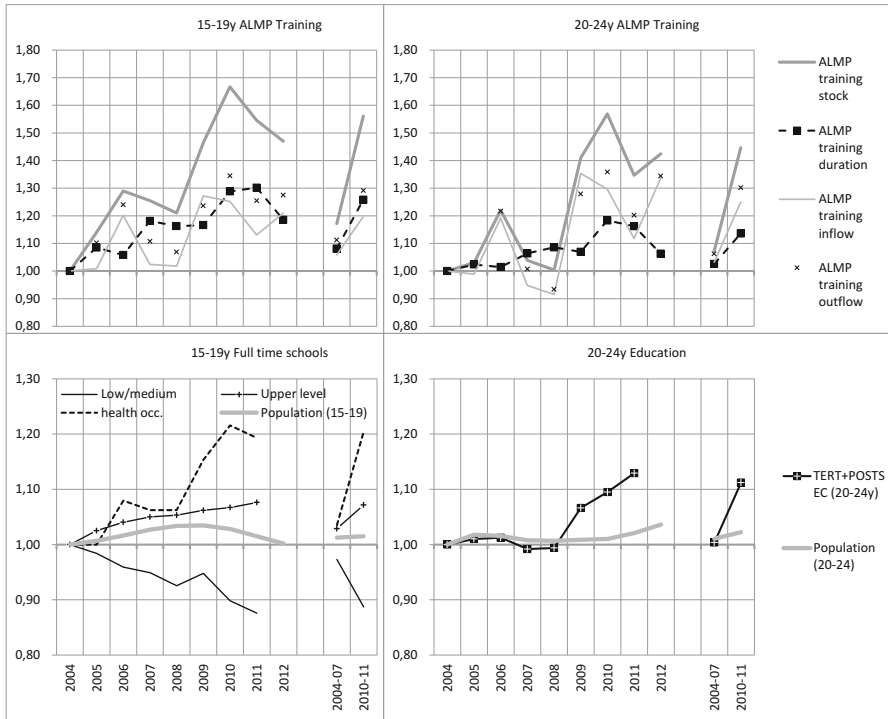


Fig. 7.2 Active Labour Market Training and Full-time Education. Movement of 15–19 years and 20–24 years Cohorts through 2004–2012 Period in Austria (Source: author’s own compilation)

goes down to a level well above the beginning of the observation, however, the increase in LMP-measures is much stronger (+ 65 % until 2010), and is still about 50 percent higher in 2012 than in 2004. Full-time post-compulsory schools show continuously the shift towards the upper level, with the lower and medium level declining; thus schools took less additional enrolment except the booming schools for health occupations in the younger age group, and the postsecondary and tertiary institutions in the older age group, which seem to react quite directly to the crisis.

Overall the comparison between the age groups show a more favourable development for the younger age group, despite the demographic strain, and in the older age group a rise of unemployment and a decline of employment, with a shift towards tertiary education in parallel. This reflects to high political priority that is given to the post-compulsory stage, with a strong focus on providing apprenticeship places for all young people seeking one. However, as apprenticeship is at the same time treated as employment – and therefore access is seen as a successful transition, the transition after completing or quitting apprenticeship is not given the same attention. Furthermore, no corresponding monitoring exists at this stage, as the completers are

seen as adults, independently from their young age, and the overall low youth unemployment is greatly influenced by the younger age group.

3 Comparison of Austria to Germany and Switzerland

The comparison looks first at some indications of the basic structures of the post-compulsory education and trainings systems. This will show that the apprenticeship systems and the transition patterns are substantially different in the three countries. For this purpose a fairly new OECD recalculation of the education and employment positions of young people is utilised that considers overlaps of the different positions. These figures also show that the transition process becomes increasingly complex. Second the proposition will be explored, whether the apprenticeship systems really contribute to a substantially lower unemployment, by comparing the relation between adult and youth unemployment in the three countries. Thirdly, the OECD statistics about LMP are utilised to verify whether the Austrian LMP interventions are also high in an international comparison, and whether the two other countries have also used instruments of this kind to a comparable high degree as Austria. This analysis can also provide insights about the proposition taken that the contribution of apprenticeship to low unemployment is influenced by the chain from employment to inclusion into social security to LMP interventions.

3.1 Different Frameworks of Apprenticeship and Transitions

Despite the fact that there are some common traits in the overall shape of apprenticeship in the three countries beside the comparatively high weight it has in skill formation – i.e., enterprises as main training providers; big role of social partners, with more weight given to employers; regulation of qualifications through occupations and established value in the labour market; strong focus on work/employment; compulsory part-time school accompanying work-based learning and instruction – the systems have developed differently, and are currently shaped in highly distinctive ways. Because of the complexity of the systems as well as of the more concrete qualitative structures, as of their different embeddedness into the overall education system and into the wider economic and political structures of society, a strict comparison would need much space. Here some main stylized facts relevant to the interaction with the youth transition structures are given, illustrated by a new statistical classification provided by the OECD (Fig. 7.3). This classification combines the educational and labour market status and allows for overlaps between different positions, in particular education and work or unemployment (but helps also to identify the people neither in education nor employment (NEETs)). If this classification is further distinguished by age groups and certain additional qualitative information is used, it can give a very instructive comparative picture of the three systems under observation.

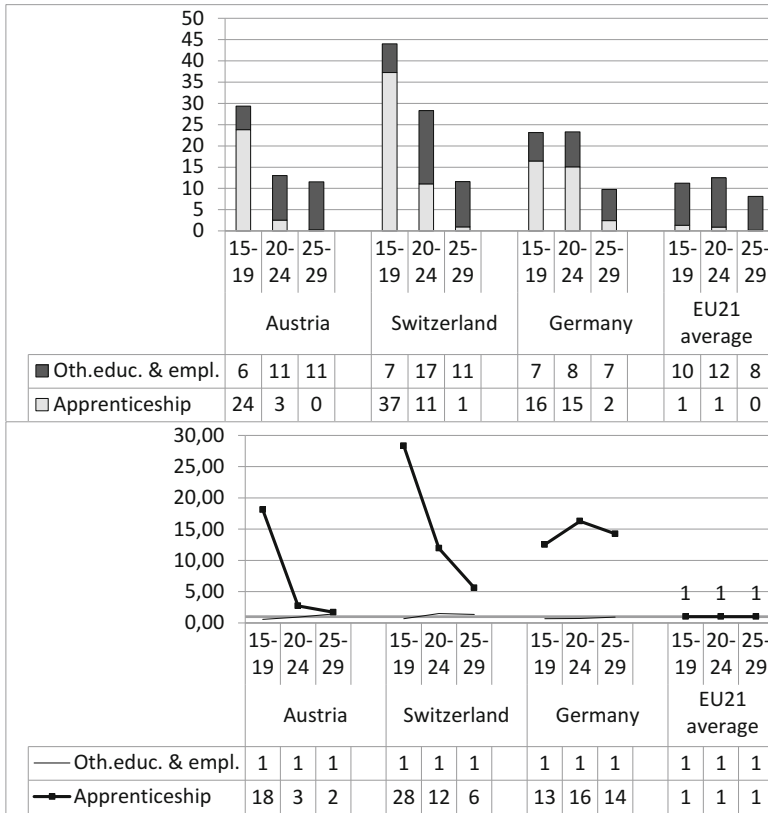


Fig. 7.3 Proportion of Apprenticeship and Other Combinations of Education and Employment (Source: author’s own compilation based on data from OECD (2012), Education at a Glance 2012: OECD Indicators, OECD Publishing, Paris. <http://dx.doi.org/10.1787/eag-2012-en>, p. 395–397, Tab C5.2a, accessed 22 Feb 2016)

- First the classification makes a distinction between a combination of work and employment in education programmes (which we call apprenticeship), and an overlap between employment and education which might take many different forms (e.g. part-time work of students for their living which is completely unrelated to their educational programmes). We can see that the latter proportion is not so low in the EU, and makes also some part in the three countries, increasing with age in Austria and Switzerland.
- The bigger difference exists in the proportions of apprenticeship. In Austria almost all of apprenticeship is located in the 15–19 years age group, whereas this is clearly not the case in Germany, where only half of apprentices are located in this younger group. This reflects two main structural issues of the German system, first, apprenticeship has increasingly started after a longer previous career in compulsory school, shifting from the normal ending after Hauptschule to Mittlere Reife which is a medium level qualification that adds about two years instruction and does not exist in Austria. This makes a later starting age (average

about 18 years) and a bigger previous input of competences; the second difference is that apprenticeship is taken by a substantial proportion of completers of the upper level academic school (Abitur), which also provides the basic requirement to study in higher education, thus creating various kinds of overlap between apprenticeship and higher education (e.g. by studying after apprenticeship or even taking apprenticeship after higher education). This broadly indicates that in German apprenticeship implicitly two different sectors exist, a more traditional one at secondary level, and a higher level one that is rather comparable to tertiary education. In Austria this kind of higher level vocational education is provided by a specific type of upper level full-time schools (Berufsbildende Höhere Schulen), thus upgrading is going on here by institutional differentiation at upper secondary level, whereas in Germany within the apprenticeship system, which overall can be seen much more qualified, but also more differentiated (with higher entry levels), and providing a much wider range of opportunities.

- In Switzerland the distribution is also different from both countries, as the proportion is much higher in the young age group which indicates a stronger overall weight in early skill formation (half of which in Austria is provided by full-time schools at different levels, and a substantial part of 'post-secondary' participation also exists, but at a much lower scale than in Germany. The differentiation in the Swiss System by the two basic sectors of production oriented and investment oriented apprenticeships, as well as the permeability path via the 'Berufsmatura' or kinds of competence based examinations is not visible in these statistics. Different to Austria, the polytechnic sector (Fachhochschule) which has been established in Germany already in the 1970s, was in the other countries lately established in the 1990s, however, with very different positioning in the overall education system, and with very different scale: in Switzerland it was built upon the Berufsmatura and apprenticeship, and grew much more quickly, whereas in Austria it provides rather additional opportunities for the graduates of the upper level vocational full-time schools, which have provided access to higher education also before that.

Overall these stylised description indicate quite different paths of opportunity and transition in the superficially so similar systems, which in particular mean a much more narrow range of opportunities in the Austrian system, compared to the others. This means also that the apprenticeship systems in Germany and Switzerland attract a much wider range of young people in terms of interests, ambitions, and previous educational experiences than that in Austria. Nevertheless, a similar sector as the Austrian apprenticeship system can be assumed to be part of the German and Swiss systems also, providing access of young people with less successful educational careers to training enterprises which also are not belonging to the most competitive sectors or ranges of enterprises.⁸ From these different structures different ranges of policy problems and policy interventions can be derived.

⁸It should be mentioned here, that the discourses at the different levels always take notice of a range of different 'qualities' at the apprentices and applicants side, however, also to assume a range of different qualities at the enterprises side is much less common, and this issue is also one seldom directly addressed by research, sometimes under terms as exploitation.

3.2 Reduction of Youth Unemployment Through Apprenticeship?

In this section some indications about the widely held assumption that apprenticeship would smooth transition and reduce youth unemployment are provided. First the OECD data about overlaps of education and labour market positions are used to widen the view about unemployment, and second changes over time of unemployment indicators are analysed.

3.2.1 Unemployment and Persons Out of Labour Force by Age Groups After the Crisis

The comparison gives the most favourable situation in Switzerland; all indicators in all observed age groups are well below the EU level (Fig. 7.4). The situation in Austria and Germany is much more mixed. In Austria unemployment in the youngest age group is not below the EU level, and in both countries the proportion of young people not in the labour force is increasingly rising to the EU level through the age groups from a very low level among the 15–19 years age group. In Germany unemployment is in the three age groups grossly similar to Switzerland, in Austria it is even lower in both groups above 20 years. For Austria this picture based on the comparative (survey created) measurements of unemployment contradicts the earlier shown picture from national register data where the situation is more relieved in the younger group and becomes more severe with age.

Compared to the EU level indicators the overall picture shows that broadly – with the exception mentioned – unemployment is lower compared to EU in the three countries, however, the proportion of young people out of labour force is not lower in the groups from age 20 to 29 years in Austria and Germany; thus attention should also be given to these groups and positions (Fig. 7.4).

3.2.2 Unemployment of the Young compared to overall Unemployment

In the public and political discourses the much plausible expectation of lowering unemployment through apprenticeship is often indicated by comparing indicators of youth unemployment alone, and then suggestively traced back to the education structure – the relationship to the overall economic performance and the whole picture of unemployment is often not taken into account. Basically this relationship, which normally indicates that unemployment among young people is higher and has lower duration, as the whole dynamic of youth unemployment has been much researched and – using econometric modelling – has turned out a complex and severely disputed one, in particular, if the wider issues of transition are also considered (for an older yet still valid comprehensive overview see Ryan 2001, and more recent easily accessible, see Bell and Blanchflower 2011).

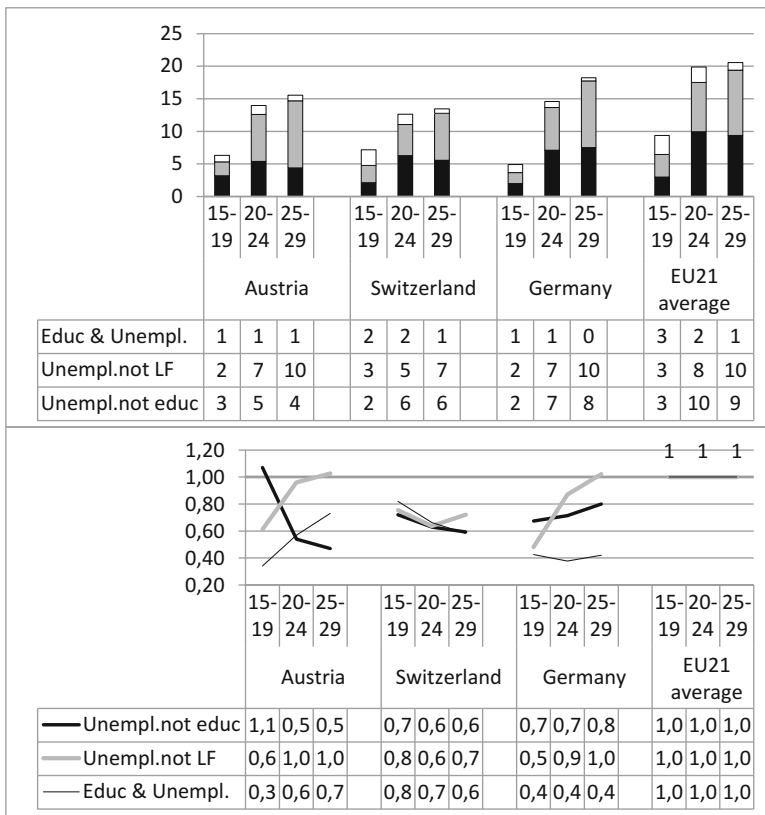


Fig. 7.4 Proportion of Unemployed Persons in Education or Not and Persons Not in the Labour Force by Age Groups (Source: author’s own compilation based on data from OECD (2012), Education at a Glance 2012: OECD Indicators, OECD Publishing, Paris. <http://dx.doi.org/10.1787/eag-2012-en>, p. 395–397, Tab C5.2, accessed 22 Feb 2016)

Without going deep into this discussion we can say that in the case of young people the more direct economic causes seem more strongly mixed with institutional aspects, among others of how qualifications are structured and utilised, and of which lines of segmentation exist, and there are several factors that may play a role. For the purpose here a very simple approach is used. The proposition is made that if the apprenticeship system makes an impact on the youth labour market, then youth unemployment should be visibly lower in apprenticeship countries *compared to overall unemployment* than in non-apprenticeship countries, and because – as we have seen in the previous section – the later make up the big majority, to the average.

Figure 7.5 gives some simple indications of this comparison based on the parallel observation of the relationship of overall unemployment in the three countries to the EU average on the one hand and the relationship of youth unemployment in the three countries to the EU level. The result basically indicates that only in Germany

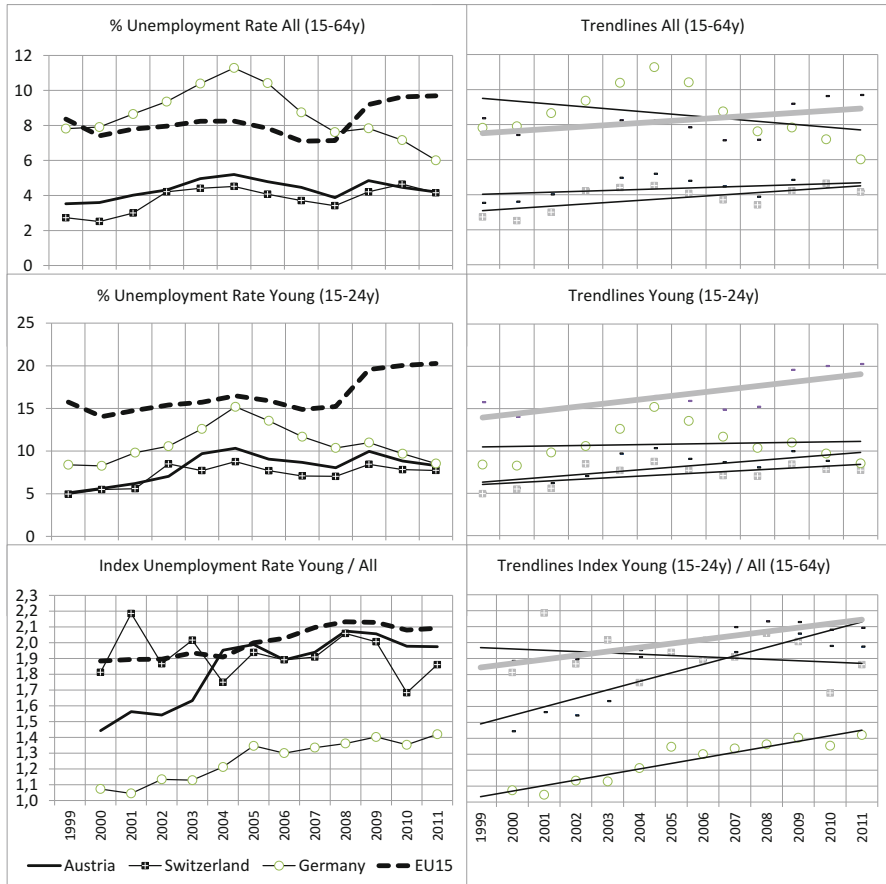


Fig. 7.5 Comparison of the Relations of Youth Unemployment and Overall Unemployment to the EU Average 1999–2011 (Source: author’s own compilation based on Eurostat database <http://ec.europa.eu/eurostat/web/lfs/data/main-tables>)

there is indeed an indication of a relatively lower level of youth unemployment to overall unemployment; in Austria and Switzerland the proportion to the EU average of both indicators is rather similar. The differences result mainly from a substantially higher overall unemployment in Germany, whereas in both of other countries the overall unemployment is similarly low relative to the average as youth unemployment.

Conventional economic reasoning would expect overall unemployment to be driven by the overall economic situation/development. From this kind of reasoning the low youth unemployment in Austria and Switzerland would be a result of the overall economic situation, and not a result from apprenticeship, except one would assume that the improved overall economic situation would be caused by apprenticeship. This position, if it can be found to some extent, is processed rather among

advocates of apprenticeship in the pedagogic or training related community than among economists. Even the approaches of ‘coordinated capitalism’ which strongly focus on apprenticeship as a substantial part of the coordinated model tend to see this as an element of a much wider and more complex amalgam of causal chains and mechanism, than giving apprenticeship the position of being a decisive factor.

Looking at Germany, where the given proportion would indicate that apprenticeship really lowers youth unemployment – and exactly this proportion is given as the decisive stylised fact by the OECD to sell apprenticeship as a solution for the serious youth labour market problems in the G20 area, and as Germany is the only apprenticeship country in this Group the result seems very suggestive; if the two other countries would be included, the chart would look like much less suggestive (OECD 2012b). The comparison of the three countries does indicate that the favourable relationship in Germany is not caused by a lowering of youth unemployment, but rather by higher overall unemployment, and its strong increase 1999-2005 (which was also reflected in youth unemployment).

Over time the proportion rather deteriorated in Germany as in Austria, only in Switzerland it improved from above the EU level to below the EU level despite of the crisis. In sum, this simple comparison poses many question marks to the assumption that apprenticeship would substantially improve the situation on the youth labour market. Seeking for experience to learn from, this analysis points to Switzerland as a positive case.

3.3 *Use of LMP-Measures for Apprentices*

Finally we challenge the observation from Austria that the channel from apprenticeship to LMP would be a main cause for lowering youth unemployment. This proposition is somehow relativized by the interim analysis which shows that it is even not so certain that apprenticeship actually lowers youth unemployment. For this purpose the OECD LMP-database is used which poses some problems as information about Switzerland is incomplete; in earlier presentations in Austria doubts have also been articulated about the data, so this analysis must be seen rather explorative. The results seem quite massive, so they might be a starting point for further consideration (Fig. 7.6).⁹

Basically the three countries (Switzerland only available until 2007) spend an above average proportion of gross domestic product (GDP) for active LMP, with an average proportion of the labour force being served in Austria and Germany, and a

⁹Besides, the author has widely searched for information and data that would provide more comprehensive comparative information about how much emphasis is devoted to young people in LMP relative to adults. However, the available literature is mostly about the evaluation of punctual measures, and meta-analysis of this literature. Thus the analysis given in this section, and the data on which it is based cannot be easily compared or triangulated with more established knowledge.

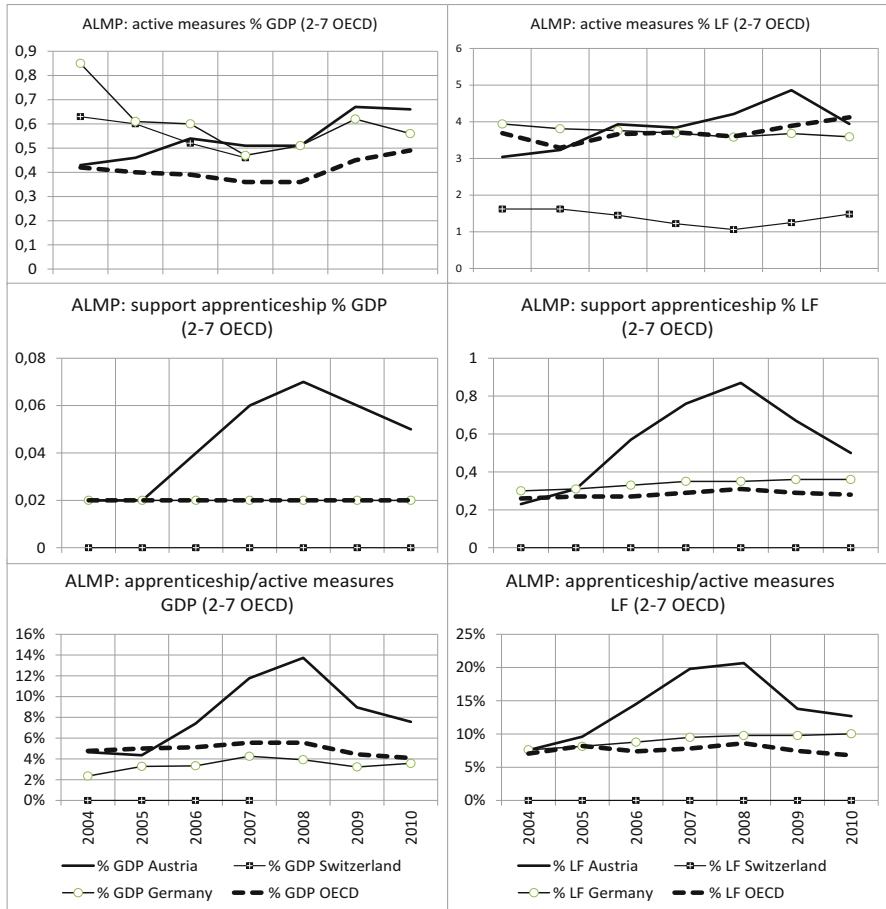


Fig. 7.6 Provision of LMP-measures for Apprentices 2004–2010 in Relation to GDP and Labour Force (Source: author’s own compilation based on Online OECD Employment database, Expenditures on and participants to labour market programmes <http://www.oecd.org/employment/onlineoecdemploymentdatabase.htm#lmp>, accessed 22 Feb 2016)

lower one in Switzerland; Austria shows a rising trend with particular increases on both indicators immediately after the crisis in 2009–2010.

Looking at the information about the use of LMP for the support of apprenticeship the figures clearly show that the Austrian pattern cannot be generalised to the other countries. Thus the chain from employment via social security to LMP might be established significantly in Austria, but not to the same degree in Germany and Switzerland.

Asking why this relationship might be established so strongly in Austria, and not in the other two countries, the institutional structure and its relation to policy making might serve as an explanation, as the Austrian system is much more concentrated on a specific group with specific problems which can also be easily identified

and communicated as a political problem: young people after compulsory school with relatively poor education results that do not have much other alternatives if they do not find access to apprenticeship. Compared to this situation, the apprenticeship systems in Germany and Switzerland are much more diversified and related to a much wider range of problems or challenges, which might have also a wider range of solutions to which LMP might not be the main (potential) solution – thus the same problem as in Austria might also be a part of the landscape, but finding other answers.

We therefore have to bear in mind, that the information is about specific LMP support *within* apprenticeship, other LMP-measures are not covered, and not in a similar way identifiable by the available information. Thus the information points to a specific strategy, to take LMP-measures *within* apprenticeship. Indeed, Austria has over decade developed a programme of institutional apprenticeship (*‘Überbetriebliche Ausbildung’*) that serves at the same time as an alternative path for young people who do not find an opening in an enterprise and as a stepping stone into an enterprise based apprenticeship. After years of piecemeal development and debate this programme has been regularly amended to the Apprenticeship Law. The basic concept is that the young people are employed with a training provider as apprentices with all their responsibilities and the wage paid from the unemployment insurance, and the enterprise training is provided via internships, which serve at the same time as a reality check for the young people and as a gateway to an enterprise based apprenticeship. Because of the payment of the (reduced) wages this programme is comparatively cost intensive which might contribute to the high expenditure shown above. In addition, various schemes of support for enterprises to employ apprentices are also available. This programme contrasts sharply to the German *‘Übergangssystem’*, which has been situated before access to apprenticeship, and has provided no credentials, thus rather stigmatizing the participants.

4 Conclusions and Reflexions

The chapter has started by discussing some mechanisms of why apprenticeship systems might provide smother transition into employment and lower youth unemployment. Whilst there are many compelling arguments for this, there are also countervailing aspects and the simple empirical analysis shows that the effects on unemployment are not so obvious to demonstrate. Then the strong political priority given in Austria to combating problems on the youth labour market was explained, resulting in a strong increase of LMP-measures during the crisis of 2008–2009. These interventions indicate that if apprenticeship would have helped to hold youth unemployment low, it would not have borne the burden alone.

A main focus of the chapter is also to give some comparative measures that indicate the differences between these three superficially so similar systems. A fairly new statistical presentation of the transition periods of the 15 to 29 years old age groups that allows for combinations of the different positions (education, employment, out

of labour force) gives a clear indication of the – in principle since some time well known – overlaps of positions which are not visible if the positions are represented as if they would exclude each other.

As a result of this analysis, there is clear indication that the German and Swiss systems are much broader and much more diverse than the Austrian which is concentrated at the lower end of a tracked education system and caters for quite a homogenous group of young people. These different patterns also might explain the differences in the use of LMP. The analysis also shows substantially diverging indications between a description based on the national register data and those based on the European labour force survey. These differences are important for further research, but in particular for practice and policies, as the latter must cope with the different signals and messages resulting from them. In this sense they are both true, despite each catching different aspects of reality. A cross-classification between the two different data some time ago has shown, that the figures of unemployed they obtain are not so different, however, some half of the registered unemployed persons did not answer that they were seeking a job, and some half of the surveyed unemployed did say they were not registered (many of the latter might come from the younger age group which has much more unemployment problems according to the survey than according to the register. Attention of the Austrian policy makers is much oriented to the registered unemployed at the apprenticeship market – and youth unemployment after completing apprenticeship in the older group is not even regularly reported). This might explain that quite a creative solution has been developed for this group with the institutional apprenticeship programme.

Overall the analyses reinforce doubts about apprenticeship being such a strong help for reducing youth unemployment, and they also show that the Austrian policies cannot be seen as a kind of generalised pattern resulting from characteristics of apprenticeship but rather as a specific way responding to the specific Austrian shape of apprenticeship.

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Part II
Asia (Including India and Excluding
China)

Chapter 8

Initiatives in Skill Upgrading: The Case of Centres of Excellence (COE) in Industrial Training Institutes (ITI) in Karnataka, India

S. Nayana Tara and N.S. Sanath Kumar

Abstract This paper attempts to describe the findings of a study carried out to assess the effectiveness and challenges encountered with regard to implementation of an initiative in skill upgrading programmes, namely COE established within selected ITIs in the southern Indian state of Karnataka. It is noted that while COE is a unique attempt to impart specialized vocational skills with a carefully designed course content to ensure theoretical as well as practical learning experience for the students the programme suffers from lack of promoting the course among prospective students and parents, leading to poor visibility and low demand. Further, COEs lack adequate teaching staff due to delays in filling up of sanctioned positions. This has resulted in a good amount of work pressure on the part of teachers leading to poor teaching quality. Compounding this, the poor student quality due to their poor and socially disadvantaged background and hailing from remote rural areas has been predisposing factors for the learning demands for this course especially due to poor knowledge of English, and quantitative skills. The job prospects and prompt placement of students critically depended upon concerted efforts in promoting the course, vibrant network of collaborating agencies including local industry players, proactive role played by Institutional Management Committees (IMCs) set up for each COE. Low intake of girls against sanctioned seats and the drop out and lower pass rates also show a poor profile of girl students.

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1 Background

In a globalized economy, a large pool of skilled workers is indispensable for attracting industrial investment including foreign direct investment. Developing skilled workers enhances the efficiency and flexibility of the labour market; skills bottlenecks are reduced, skilled workers are more easily absorbed into the economy, and their job mobility is improved. It is crucial to invest in quality secondary and tertiary education and in Vocational Education and Training (VET) if India's economy is to develop and remain competitive in world markets (World Bank 2008).

India's transition to a knowledge-based economy requires a new generation of educated and skilled people. Its competitive edge will be determined by its people's ability to create, share, and use knowledge effectively. A knowledge economy requires India to develop workers – knowledge workers and knowledge technologists – who are flexible and analytical and who can be the driving force for innovation and growth. To achieve this India needs a flexible education system: Basic education to provide the foundation for learning; secondary and tertiary education to develop core capabilities and core technical skills; and further means of achieving lifelong learning. The education system must be attuned to the new global environment by promoting creativity and improving the quality of education and training at all levels.

There are at least 20 different government bodies in India running skill development programmes with little synergies and considerable duplication of work. For instance, both the Ministry of Labour and Employment (MOLE) and the Ministry of Human Resource Development (MHRD) created their own sector skill councils to identify skill development needs in the country, even while the National Skill Development Corporation (NSDC) was setting up Sector Skill Councils in 2011 (Vivek and Kapoor 2015). In March 2009, the Government of India announced a National Policy on Skill Development, laying down the framework within which it wanted skills-related training to be conducted. The Policy clarified the roles that different stakeholders – government, industry, trade unions, and civil society – would need to play for the creation of a skills ecosystem in India.

Making a departure from the past, the 2009 Skill Development Policy clearly specifies that skills-related training should become out-come-focused and linked to jobs and employability. The Policy states that access to training should be available to all, particularly those at the bottom of the pyramid. It says that the government should complement private sector initiatives in skill development and emphasizes the need for short-term, industry-relevant courses. Skills and knowledge are the driving forces of economic growth and social development for any country. Countries with higher and better levels of skills adjust more effectively to the challenges and opportunities of world of work. With this avowed goal, the Government of India has initiated several skill development programmes and established several training institutions across the country. In India some of the training institutions in the formal system have played a major role in creating pool of skilled workers

which include ITIs, Industrial Training Centres (ITCs), Polytechnics, Community Polytechnics (CP) and Community Colleges.

It is interesting to note that Chenoy (2013) refers to the 11th Five-Year Plan (2007–2012) document mentioning that while 12.8 million people join the Indian workforce each year, the annual training capacity is less than half of that. Further, he adds that with one of the youngest populations in the world and projected to have 64 % of its likely population in the 15–59 age bracket by 2021, India is uniquely positioned to take advantage of this favourable demographic profile to take that giant leap from being a developing country to a developed one in a decade from now. However, leveraging this ‘demographic dividend’ (the average age of an Indian would be 29 by 2020 compared to 37 in China and the US, and 45 in western Europe) is easier said than done on account of the poor level of skills possessed by the vast majority of those joining the workforce each year – a situation that has arisen owing to high rates of school dropouts, inadequate skills training capacity, a negative perception around skilling, and low employability of even those holding professional qualifications, such as degrees in different engineering disciplines. An additional issue is that these outcomes vary from state to state.

Recognizing the need and urgency of quickly coordinating the efforts of all concerned stakeholders in the field of Skill Development and Entrepreneurship, Government of India notified the formation of the Department of Skill Development and Entrepreneurship in 2014 which subsequently led to the creation of the Ministry of Skill Development and Entrepreneurship (GOI 2014). The following four outcomes to be achieved have been identified:

1. Ensure youth emerging from formal education are employable with job or self-employment oriented skills;
2. Ensure people stuck in low income jobs and in the unorganized segments can access growth opportunities through up-skilling/re-skilling and Recognition of Prior Learning (RPL);
3. Improve supply and quality of the workforce for industry, contributing to increased productivity;
4. Make skilling aspirational for youth.

ITIs were established in the country, which are the major training ground for skilled manpower. However, the quality of technical and vocational education imparted in these institutions in the country has been a matter of concern among policy makers. The challenge is to facilitate ITIs to keep pace with the fast growing technological demands for industry and the expanding universe of knowledge. Further, such an attempt to enhance the quality of training and training infrastructure through improved design and delivery system would, more importantly, have positive employment outcomes of graduates from the vocational training system especially in the existing industrial and economic scenarios where considerably high demand for professional technicians exist. Towards producing technicians of world standard, the Government of India has launched a programme of upgrading 500 ITIs during 2005–2006 at the rate of 100 ITIs each year. Under this programme appropriate infrastructure and equipment is to be introduced.

2 The Study of Centres of Excellence

Given the need for enhancing the quality of skill development programmes already in place, several initiatives have been taken by the government. An important one such initiative is the establishment of COE. During 2005–2006 a total of six ITIs were covered under domestic funding and thereafter 30 ITIs were covered under World Bank Assistance in Karnataka. The present paper describes the findings of a study carried out to assess the progress of the programme of COE. The study was carried out at the instance of the Commissionerate of Employment and Training, Government of Karnataka by the Indian Institute of Management Bangalore. The study focusses on the extent to which new initiatives including modernization of COEs have been successful and challenges faced thereof. The conclusions drawn in this regard are based on a field study carried out in selected COEs located in the Southern state of Karnataka.

2.1 Study Objectives

The following are the major objectives of the study: To find out procedures adopted for selection of trainees:

- (a) To examine methods adopted for identifying sectors based on local industry demand;
- (b) To assess the capacity levels of Junior Training Officers (JTOs) through their qualifications and training experience;
- (c) To find out the existing basic infrastructure such as building and training equipment and assess operational requirement of training tools and equipment;
- (d) To find out the extent to which syllabi has been upgraded or revised to meet the required standards;
- (e) To examine methods adopted for evaluation of trainees;
- (f) To find out efforts made by COE and the department for successful placement of trainees;
- (g) To examine the roles and responsibilities of IMC and State Steering Committee and their effectiveness in addressing programme goals and objectives;
- (h) To explore and suggest mechanisms for project monitoring and implementation at the state and lower levels;
- (i) To suggest ways and means of hiring consultancy services for monitoring building projects and other infrastructure-related activities;
- (j) Based on the findings, make suggestions for improving pro-program efficiency and effectiveness.

Table 8.1 Cluster-wise Distribution of Sample COEs

Cluster	Sample COE
Production and Manufacturing	Bhadravathi
Electrical	Raichur
Electronics	Huvinahadagali
Automobile	Mysore
Fabrication	Bangalore (B T Centre)
Refrigeration & Air-conditioning	Karwar

Source: author's own compilation

2.2 Methodology

In order to accomplish the objectives delineated in the previous section, the following methodology was adopted:

- (a) A detailed study of project documents/literature were carried out at the outset.
- (b) A total of six ITIs were selected from among the existing COEs for detailed study. In this regard, one COE was selected from each cluster. Further, the sample centres were chosen providing adequate geographical representation as well as year of establishment of COE. In this respect, the following sample COEs were covered in the study (Table 8.1):
- (c) Personal visits were made to each of the selected sample centre by the study team and detailed interviews were carried out with the key functionaries including principal, Training Officers (TOs) and others with a set of semi-structured interview schedules and check lists. Further, detailed discussions were held with members of IMCs available during the time of visit of the study team.
- (d) The study team visited classrooms, workshops, office areas, storerooms, and common facility areas of the establishments and made physical observations of the training infrastructure as well as other facilities besides observing classroom trans-actions during the time of visit.
- (e) Detailed interviews were also carried out with the key officials at Commissionerate of Employment and Training in order to find out various managerial issues and challenges encountered in programme implementation with the aid of semi-structured interview guide.
- (f) Besides, official records provided by the Commissionerate of Employment and Training, Monthly Monitoring Reports (MMR) etc., were examined during the study.

2.3 A Brief Profile of the Scheme of Centres of Excellence

The Scheme of COE was introduced with the main objective of enhancing the quality of training transactions in the ITIs through vibrant collaborations with the industry, up-gradation in training methodologies, a robust regime of Training of Trainers

(TOT) in the relevant sectors and trades and placement of trainees through support for self-employment and wage labour. The following are the major highlights of the scheme (Government of Karnataka n.d.):

- Introduction of multi-skilling courses by way of Broad Based Basic Training (BBBT) of one year duration, followed by Advanced and Specialized Modules, which includes appropriate in-plant training in industries.
- Adopting industry wise cluster approach, multi entry and multi exit provision.
- Public Private Partnership in the form of IMCs to ensure greater and active involvement of industry in all aspects of training.
- The training will be provided to trainees who have completed their Secondary School Leaving Certificate (SSLC) with science as one of the subject.
- The total duration of the training is two years and comprises of following components:
 - Training in Basic skill areas (BBBT) for a period of one year.
 - Training in Advanced modules for a period of six months.
 - Training in specialized modules for a period of six months and training provided in the industry.
- The testing and certification for BBBT and Advanced modules will be conducted by National Council for Vocational Training (NCVT) while the trade testing and certification for specialized module will be done jointly by the State Government and Industry.
- During the period from 2005–2006 to 2009–2010, COE was established under Government of India assistance for three sectors in a total of six ITIs. In addition, establishment of COEs were taken up under World Bank Assisted Vocational Training Improvement Project (VTIP) in a total of 30 ITIs in six sectors during the period 2006–2007 to 2012–2013. The sectors covered in the 36 COEs currently established include Production and Manufacturing, Electrical, Automobile, Fabrication, Refrigeration and Air Conditioning and Electronics.
- The Project cost is based on cost sharing basis with the release of Central Share and State Share of funds being on Pro-rata basis in the ratio 75:25. The total cost of the World Bank Assisted (VTIP) ITIs is \$17.5 million (\$0.58 million per ITI), Central Share being \$13.1 million and State Share being \$4.4 million.
- The selection of the trainees will be done as per the existing Craftsman Training Scheme (CTS) norms. The total intake of the trainees is 120. In BBBT, there are six modules, for each module 20 trainees should be allotted on rotation basis for one year. In advanced module three modules are compulsory. Each batch will be trained under particular module.
- The major components of the project include Civil Works, Tools & Equipment and TOT.
- Since its inception during 2005–2006, a total of \$10.5 million has been released for the project of COE with an agreement of a central and sharing ratio of 75 % and 25 % respectively. However, there has been an excess state contribution dur-

ing the years 2005–2006, 2006–2007 and 2009–2010 indicating the priority given by the state to the COE programme.

3 Study Findings

3.1 Need for More Publicity and Promotion of the COE

The eligible qualification for admission is a pass at SSLC level which is equivalent to 10th Grade. Details of the course are given by an exclusive counsellor to each of the eligible candidates and obtain their willingness to undergo the course. It was revealed during the course of the interview that COE, being a relatively new programme as compared to conventional programmes under the more popular CTS, candidates and their parents expressed some apprehensions about the employment prospects of the course and would rather opt for the well-established CTS courses. In this light, almost all of our respondents including principals and training instructors reported that they had to make huge efforts to explain the benefits and employment prospects of COE course and motivate the students to take up the course. It was clear that the programme of COE had not received due publicity and promotion among the general public.

3.2 Equity Assurance

Given its avowed principle of providing equal opportunity and assurance to its students, the course of COE places paramount importance for ensuring equity in selection of candidates, providing incentives in the form of stipend and scholarships for students coming from socially disadvantaged sections of the population including students belonging to Scheduled Castes/Scheduled Tribes (SC/ST), minority groups, girl students etc. Towards this end, the process of student selection is governed by clear cut guidelines for ensuring equity among all sample COEs covered in the study. The findings reveal that the general students (both girls and boys) get a monthly stipend of Rs.50 while students belonging to SC/ST receive a monthly stipend of about \$2 per month. Needless to say, the amount of stipend provided to students is abysmally low compared to the present living costs. Compounding this is the fact that there have been inordinate delays in the release of stipend funds leading to severe hardships on the part of students. This was vociferously aired by all our respondents in the sample COEs. As a student said:

I come from a remote rural area and belong to a very poor family. The stipend offered in the course is not at all sufficient. We eke out a hand to mouth existence and I cannot describe

the hardship I go through. Soon after my classes in the evening, I go to the market place where I work as porter and help in loading and unloading goods for which I get a meagre wage which provides me my daily meal.

The above sentiment was also echoed by the principal of one of the COEs who said:

I feel deeply sorry for the plight of my students who come from extremely poor background and have to struggle for a single meal. Further, we do not provide any hostel or staying facility which puts them in still difficult situation. Many a times, I ask them to stay in a shelter available within the training school premises, though I am not officially permitted to do so. I have also requested a nearby hotel to provide food for our students who go there after working hours. However, this is a temporary arrangement ... I really do not know how to find a lasting solution for this ...

A study of the intake of students according to social categories in the sample COEs indicate that by and large, the guidelines of providing quota for SC/ST students have been adhered to. Further, the findings reveal that the dropout rate has also been reasonably under control. Discussions with the key functionaries of the sample COEs revealed that the first year of the course (BBBT) forms the most difficult part for students and dropout rates are relatively higher at this level. However during the Advance Module and Specialized Module a degree of stability is observed with minimum dropout rates. Nevertheless, there are variations in this regard among the sample COEs. For instance, in one of the sample COEs, out of 32 SC and nine ST students admitted during 2008–2009 for BBBT, only two students belonging to SC had passed. During the year 2009–2010, out of 29 SC and nine ST students admitted for BBBT four SC students and none of the ST students passed indicating the poor performance of students of this group and also the need for evincing more intensive attention to these students.

3.3 Challenges of Girl Students

With regard to the status of girl students in the sample COEs, findings indicate low intake of girls against sanctioned seats. Further the drop out and pass rates also show a poor profile of girl students indicating the need for more intensive promotion of intake of girl students in the programme.

It is pertinent to mention here that girl students opting for such ‘male oriented’ trades as fabrication and automobile, face challenges of being not accepted by the industry during placement. This was clearly brought out during our discussions with teachers as well as industry respondents. As a principal said:

By and large, girl students are not preferred by the heavy industry as they feel that it is not practicable. Socially there is a stigma that girls cannot perform well in such male-dominated trades such as automobile and metal fabrication works. This is a challenge to be seriously addressed.

A similar opinion was expressed by another respondent thus:

In many instances girls need to work in congested work place along with boys, which leads to many unpleasant situations to their disadvantage. In this light, many industrial enterprises insist that only boys are preferred.

Though the social equity assurance plan under COE is adhered to, it needs strengthening beyond providing of quotas in admission for SC/ST and girls. The findings clearly reveal the urgent need for emphasizing the need for focused attention to the students of this group in the training transaction, placement activities and providing a social ambience and support that would enhance their self-esteem and motivate them to accomplish excellence in their studies. In this respect, our discussions with the key officials at the Directorate of Employment and Training (DET) revealed that there is a provision of fee waiver for girl students. Needless to mention, provision of hostel facilities, fee waivers, higher stipend, provision of minimum infrastructure facilities including well maintained toilets for girls, adequate drinking water facilities exclusive girls' lounge and hygienically maintained canteen facility with affordable rates must form mandatory facilities and are to be officially instituted as part of the programme.

3.4 Training Capacity Levels of Trainers/Teachers

By and large, the training faculty members are reasonably well qualified in their respective trades. A majority of the JTOs and TOs covered in the study TOs (60.0 %) have Diploma in their respective trades or passed ITI or National Apprenticeship Certificate. It was noted that four JTOs were engineering graduates while three are either SSLC pass or have other qualifications. Besides these basic qualifications, a significant majority (69.2 %) of the JTOs had undergone at least two spells of training programmes and on an average each JTO had undergone two to three training programmes in a relevant area of their trade.

It must be mentioned that the duration of training received is an important indicator of the depth and intensity of capacity building activity. In this respect, our findings reveal that 18 JTOs had under-gone training for three months while 11 JTOs had reportedly undergone training for longer duration with some even having more than one year of training. Only two JTOs reported that they had undergone less than 60 days of training.

An overwhelming majority of the respondents (89.7 %) reported that the training they have received was highly beneficial in their daily work routine and felt that such training activities must be an ongoing process as development in technology and training methods have been undergoing tremendous change in a globalized industrial scenario where obsolescence is a major predisposing factor and must be addressed effectively. In this regard, the JTOs were further encouraged to mention specific areas in which they felt the need for more intensive training. It must be mentioned that the felt training needs as expressed by the respondents were pre-

dominantly trade-specific. However there were many common training needs aired by most of the respondents which are presented as follows:

- Recent developments in the subject(s) taught,
- Communication skills,
- Personality Development/Soft skills,
- Innovative teaching/training methodologies,
- Use of computers/IT technology,
- More practical exposure in the training domain.

3.5 Good Training Infrastructure But ...

The study team visited classrooms, workshops, office areas, store-rooms, and common facility areas of the establishments. It was noted that the extent of space of the institute varied with some ITIs possessing large extent of land (70,000–90,000 sq. meters) while some having relatively limited land space. However, exclusive COE buildings have been sanctioned by the government in these COEs and are at various stages of construction.

By and large, the classrooms were found to be reasonably adequate in all sample COEs though there is scope for improvement. However, it was noted that toilet and drinking water facilities for students was woefully inadequate in all sample COEs. It is imperative that basic facilities such as drinking water, separate toilets for men and women and exclusive lounge for girl students are vital needs of any organization and COEs are no exception to this.

Another important felt need reported was that of canteen facility which is conspicuous by its absence in all sample COEs covered. This facility is an important one as most of the students come from distant places. As a student in one of the centres said:

Our school is located far away from the town and we do not have any eatery such as canteen facility in our school. During lunch hours we have to walk long distances to private eateries. A canteen within the school premises is very much needed for us.

The need for canteen facility is all the more crucial as most of the ITIs are located away from the city/town centre and hence students, especially those coming from distant places have difficult access to such facilities.

Another vital facility which is absent in all the COEs is that of hostel facility for students. In fact, lack of hostel facility was mentioned as a major disincentive for students to join courses at ITIs. In this light, the urgent need for hostel facility for girl and boy students was vociferously aired by all the respondents including students, principals, and other key functionaries.

3.6 Challenges of Safe-Keeping of Training Equipment

Even though exclusive provisions have been made in the new COE complex for safe keeping of training equipment, it was noted that in many COEs covered there is an absence of a well-planned storage/retrieval facility for training equipment used in the daily transaction. It was noted that many materials were dumped in the corner of ill-maintained rooms. This was especially so at two of the sample COEs. In one COE, it was noted that training materials worth Rs.10.4 million were dumped in a small room and the materials have remained unused as no instructors are posted as yet. As the materials are of high unit cost, the charge responsibility of training equipment has been a matter of serious concern among the TOs/JTOs with whom such responsibility is vested.

3.7 Need for Upgrading of Training Syllabi

The course structure and the syllabi of all the course components namely, BBBT, Advanced Module and Specialized Module under COE are prepared by a panel of experts under the aegis of NCVT, Government of India and the ITIs have clearly defined guidelines regarding following the course syllabi in total. In this regard, our discussions with the key functionaries of sample COEs revealed that there has not been any up-gradation of the syllabi of any of the training modules so far. A study of the syllabi provided to study team interestingly does not have suggested readings related to respective modules within the three course components.

The findings further reveal that training instructors often resort to downloading of selected books and other teaching materials from the internet and use them during the teaching transaction. This has the hazard of copyright violations if due permission by the authors are not obtained.

3.8 Coping with the Course-Students' Challenge

The course structure of COE as compared to other CTS courses is unique in that it prepares the trainee to acquire multi-skills in the first half of the course duration and thereafter more intensive exposure to the main sector domain for six months and the remaining six months is spent in practical experience in collaboration with industrial unit. Our discussions revealed that the course scheduling of BBBT comprising of six modules wherein the trainees are divided into six groups and go through the course on a rotation basis has been considered as most difficult for the students to cope with the subjects taught. This is because of the fact that modules within the BBBT component are mutually exclusive and there appears to be a disconnect between the modules. So much so, that by the time examinations are held after the

end of one year duration, the students would have forgotten the subject taught as there is no mechanism for revision or refresher course in the intermediary stages of the component eventually resulting in poor student performance. It must also be mentioned that each of these six modules are a huge domain by themselves (e.g. electronics, electrical engineering, etc.) and a mere two months of training in these subjects may not provide sufficient domain exposure. In addition, the difficulty is further compounded by the fact that the students have poor language and math skills to cope with the course requirements. Further, there is no systematic orientation programme for fresh entrants at the beginning of the course though some COEs reportedly provide broad outline of the course the student is about to enter. In this light, several suggestions were put forth by training faculty as well as principals of the sample COEs. The following are some of them:

- Systematic orientation of students regarding the course requirements.
- A well designed induction course for all students especially in (a) basic mathematics; (b) English language skills; and (c) Personality Development which is to be made mandatory.
- Devise a mechanism to ensure a robust, comprehensive pedagogic link between the modules.
- Introduction of semester system in which examinations are conducted at the end of each semester.
- Recast the programme to allow sufficient period of time for advance modules as the existing duration of six months is reportedly too short while in-plant specialized course component may be reduced to two or three months.

During a presentation given by the TO of a reputed industry partnering with one of the sample COE, mentioned several crucial issues regarding training capacity of trainers, industry expectations from COEs and student placement, among others. It would be pertinent to mention some of them:

- Women trainees are generally not preferred by the industry as the tasks involve handling of heavy material and equipment besides working in inconvenient shifts. Further, girls have to work in close proximity with boys which might lead to unpleasant situations.
- Most important aspect is that COE instructors woefully lack training in latest developments in the sector and thus are not fully competent to cover various topics. Given this, the students who are taken as in-plant trainees also lack sufficient sector knowledge and pose great difficulties to assign various tasks at the workshop locations.
- There is an urgent need for COE to arrange teaching and training by experts drawn from the industry on a regular basis and this needs to be built into the course outline mandatorily.
- It is important to have clear guidelines by COE regarding stipend for students studying in specialized modules. In the absence of such a guideline students are often exploited by many industries. Further there is no clarity regarding leave facility to be given to trainees.

- COE being a unique course it is imperative that the course be made more professional through systematic and well scheduled teaching regime in order to achieve credibility.

3.9 Student Placement and Employment Prospects

Placement of trainees is a crucial indicator of the value of the course from the point of view of student's career aspirations and more importantly his or her livelihood. Further, the popularity and demand for a course is also a function of the quality of training imparted and the reputation of the institution offering the course. In this light, prompt and decent placement of successful trainees is an avowed objective of COEs. Findings in this regard reveal that more than one-half of JTOs (53.8 %) felt that the job prospects for their students are reasonably satisfactory. However, it was noted that the industry is quite apprehensive to recruit the COE products due to poor student quality in terms of communication skills, professional competence to match industry standards and requirements. This is a major point of concern in placement of students turned out of the sample COEs and better employment prospects. The major challenges reported included the following:

- Lack of adequate support from local industry;
- Reluctance on the part of state owned corporation to employ COE trainees due to lack of awareness of the value of COE programme;
- Industrial backwardness and lack of political will to support the programme;
- Students prefer to government organizations due to job security.

3.10 What Works for Better Employment Prospects for Students?

Nevertheless, the placement scenario in a well-run sample COE presents a highly positive picture and points towards what works for better in successfully placing the students. Discussions with the principal and training functionaries of this COE revealed that the employment prospects for their students are excellent so much so that there is cent percent placement. The following major reasons are put forth in this regard:

- Vibrant collaborative links with the major industry in the region;
- Exclusive placement cell which is in constant contact with the local industries;
- High demand for technicians in the sector leading to prompt placement of students;
- Proactive role of IMC, which takes keen interest in placement activities among others.

It is reiterated that the above finding pertains to one particular COE.

3.11 Institutional Management Committees (IMCs) – Drivers of ITIs

IMC is the policymaking body that steers the overall functioning of COE. In this respect, IMC is expected to take active role in elevating the quality of the programme broadly through effective monitoring and supervision of the COE activities, initiate and support programmes of capacity building activities for teaching and other functionaries, ensure provision of adequate teaching/training infrastructure, guide in financial management of the centre and establish vibrant collaborative links with the industry to ensure greater and active involvement of industry in all aspects of training and initiate successful placement of the products of COE in a competitive manner. In this regard, clear guidelines are provided by the Directorate General of Employment and Training, Government of India with respect to the roles and responsibilities of IMCs.

During the course of the study, efforts were made to contact and discuss the functioning of IMCs of sample COEs. At the outset it must be mentioned that each of the sample COEs had their own context-specific challenges and the role of IMCs in the respective COEs varied according to the severity of the problems faced. However it was noted that, by and large, the involvement of IMC members in the operation of programme was quite limited. Furthermore, it is important to note that COEs established during the first phase of the programme are more or less reaching a stage of operational plateau though with several challenges. To this extent there was an element of stability in the overall functioning. However, this is not true with respect to COEs established in later phases wherein the programme is yet to reach this stage of stability. Further, our discussions with the IMC members revealed that there is an urgent need to involve them in not only policy making and financial decision making roles but also in monitoring and overall supervision of programme implementation and offer periodic guidance to the functionaries. Given the fact that COE courses are different than other conventional trades as it aims at multi-skilling as well as providing flexibility in the industry regarding task allocation, it is all the more important that all out efforts are needed to make the programme more visible among prospective students and their guardians, relevant sectors of the industrial domain and work towards establishing sustained credibility for the course.

Almost all the IMC members interviewed unanimously felt that there is an urgent need for projecting COE courses as containing professionally planned curriculum which offer great potential for acquisition of unique skills which are highly in demand in the contemporary industrial scenario. The role of IMC in providing whole hearted guidance and support in this regard needs no overemphasis. It was noted that there is minimal participation of IMC members in the daily transactions of COEs be it observing training sessions, participating in orientation programmes for students, distribution of certificates and appreciation of outgoing students and other activities and initiatives taken up from time to time.

3.12 Course Monitoring and Supervision

At present, the COE programme is monitored by DET at the state level which receives MMR, Quarterly Reports as well as Annual Reports concerning the progress achieved and problems faced in each of the COEs. The MMR essentially dwell on achievement against physical targets related to appropriation of funds under prescribed heads which broadly include salaries and allowances of staff and officers, establishment expenditure, disbursal of stipend, progress in building construction, and expenditure related to modernization. Further, COEs are expected to submit Monthly COE Review Format which provides details regarding student admission, strength of students at BBBT, Advance Module and Specialized Module as well as drop out status. Besides, monthly meetings are held wherein the principals heading the COE make presentations in a prescribed format devised for the purpose. In addition, each of the COEs undergoes four mandatory inspections in a year carried out by a team designated by the Government and the reports of the team are submitted on a prescribed time schedule.

The findings further reveal that state level functionaries make fewer visits and this is a matter of discontent for some COEs covered in the study. It was reported that many long pending issues related to sanction and release of funds, resolving of matters related to irregularities in financial appropriation, legal matters and cases related to service matters pertaining to individuals remain unattended and most often is a matter of deep anguish among the functionaries. This, according to many respondents, has affected smooth functioning of the centres.

3.13 Major Problems Faced by Training Instructors

An overwhelming majority of JTOs across all sample COEs reported that pressure due to handling of both COE and CTS courses was affecting them a great deal. In this regard, it was suggested that a norm of assigning exclusive JTO for each module needs to be worked out. It was mentioned by some of the respondents that workload norms are carried out in an arbitrary manner and many a times administrative tasks are assigned thereby affecting their academic activities. Besides, other problems mentioned included the following:

- Low salary and allowances;
- Lack of promotion and career progression;
- Pressure due to assuming charge responsibilities;
- Lack of teaching/training equipment and infrastructure;
- Lack of living quarters facility;
- Delays in administrative approvals/sanctions affecting work;
- Lack of training in latest teaching methodologies.

3.14 Perceptions Regarding Problems Experienced by Students

Efforts were made in the study to elicit perceptions of principals and JTOs regarding problems faced by students. In this respect multiple responses were elicited from the respondents and the findings in this regard reveal that students suffer from a variety of problems and difficulties during the course of their study period. It must be mentioned that most of the students belong to poor and socially disadvantaged sections of the population and often have rural background. This by itself constrains them in terms of comprehension and absorption capabilities due to lack of English language skills and communication difficulties. This leads to loss of self-esteem eventually leading to poor performance. All the respondents unanimously agree to this fact. Our interviews with the principals reveal that urgent steps be taken to instill confidence among the students and put in place a solid induction and orientation course for all the students admitted and are at various stages of the course. The other major problems of students as perceived by the respondents include the following:

- Poor family background;
- No or inadequate stipend;
- Difficulty in coping with short duration BBT modules;
- No hostel facilities;
- Lack of English language and communication skills;
- Inadequate training infrastructure;
- Lack of adequate transport.

3.15 Perceived Organizational Strengths and Weaknesses

All the principals and JTOs were asked to mention their perceptions regarding what they felt was good about their organization and conversely what were the areas of concerns. In this respect the findings reveal the following (Table 8.2):

4 Conclusions

Harnessing the demographic dividend through appropriate skill development efforts is a critical element to achieve inclusion and productivity within the country and also a reduction in the global skill shortages. In this light, a well-orchestrated large scale skill development is thus an imminent imperative. This is more so in a country as vast and diverse as India where an abundant human resource is waiting to be endowed with professional skills to compete in a globalized industrial order. With the opening up of the economy and increase in exports, improving the productivity of the workforce is a key challenge for many corporations and entities in India. Further, as the Indian economy grows, a large number of skilled persons will be

Table 8.2 Perceived organizational strengths and weaknesses as mentioned by the principals of sample COEs

COE	Perceived strengths	Perceived weaknesses
COE 1	Good training imparted with available facility	Lack of adequate infrastructure
	Campus interviews arranged for trainees	Lack of adequate funds
	Bright placement prospects	
COE 2	Highly cooperative staff	No permanent experienced and trained staff for COE
	Sufficient land available for development of infrastructure	Lack of adequate infrastructure Negative attitude of staff
COE 3	Cooperative teaching staff	Lack of adequate training for teaching staff
	Smooth administration	No posts of COE sanctioned
	Good work environment	Lack of hostel facility for students
COE 4	Good coordination among staff	No building for COE programme
	Good infrastructure with regard to CTS	No posts of JTOs for COE sanctioned so far
	Good quality of training imparted	
COE 5	Very good teaching faculty	Frequent transfer of staff
	Excellent campus	Equipment are conventional types
	Availability of high quality training infrastructure/equipment	Equipment in some trades such as machinist, machinist grinder, turner etc. are outmoded and needs to be replaced
COE 6	Cent percent Placement of students	Unable to control drop out ratio
	Good building and infrastructure facilities	Unable to easily place girl students

Source: author's own compilation

required to sustain this growth. Chenoy's study mentioned elsewhere mentions that the net enrolment in vocational courses in India is about 5.5 million per year compared to 90 million in China and 11.3 million in the United States. A mere 2 % of Indian workers are formally skilled. This is a pointer towards the critical need for increasing professionally trained workforce.

The programme of COE is a unique attempt to impart specialized vocational skills as compared to other conventional courses in that it prepares the trainee to acquire multi-skills in the first half of the course duration and thereafter more intensive exposure to the main sector domain. The course content and syllabi of the course are carefully designed to ensure theoretical as well as practical learning experience for the students. However, though a well-conceived programme, lack of awareness regarding its uniqueness and usefulness among parents, students and industry has resulted in very poor demand for the courses as the course has not achieved a brand image as yet.

It was noted that administratively, COEs lack adequate exclusive teaching staff and so far most of the JTOs handling COE courses are drawn from those teaching CTS courses. Further, delays in administrative sanction for filling up of sanctioned

posts have been one of the major reasons for this situation. This has resulted in a good amount of work pressure on the part of JTOs who teach both COE and CTS courses. Needless to mention, this has affected the teaching quality to a great extent.

While some of the samples COEs are endowed with adequate training infrastructure including latest tools and equipment, there were others which lacked such training infrastructure. Interestingly, older COEs as compared to recent ones were relatively well equipped in this regard. Exclusive COE complexes have been sanctioned in five of the six sample COEs which are in various stages of construction and are expected to be completed in due course of time of which one COE complex is about to be commissioned.

By and large the locations of sample COEs established are reasonably relevant to the local industry demand. However, the poor student quality due to a variety of reasons including hailing from poor and socially disadvantaged sections in remote rural areas the students are not attuned to the learning demands for this course due to poor knowledge of English, and quantitative skills.

A majority of the teaching staff are adequately qualified in their respective trades. Most of them reported that the training they have received was quite beneficial and opined that there is an urgent need for participating in such programmes on a regular manner in order to keep pace with the latest advances in the industrial sectors. Currently however, there are no career growth opportunities for JTOs, which is a de-motivating factor.

It is noted that job prospects and prompt placement of students critically depends upon concerted efforts in promoting the course, vibrant network of collaborating agencies including local industry players, proactive role played by IMC in accomplishing successful student-industry interface and the overarching role of the department in ensuring placement of students.

The role of IMCs appeared to be weak in many sample COEs and limited to only a few issues such as financial approvals, procurement related matters and to some extent student placements. IMCs appeared to have only advisory role without adequate powers and minimal roles in the areas of staff training, constant interaction with industry to generate demand for COE students, instilling confidence among students through regular interaction with them and providing all necessary support and guidance.

The Social Equity Assurance plan under COE needs strengthening beyond providing of quotas in admission for students belonging to SC/ST groups and girls. There is an urgent need for emphasizing the need for focused attention to the students of this group in the training transaction, placement activities and providing a social ambience and support that would enhance their self-esteem and motivate them to accomplish excellence in their studies.

The study of COEs indicates the need for a meticulously planned and concerted effort to prioritize quality skill development programme which is accessible to all, especially those who are socially disadvantaged living in rural areas with less gainful employment engaged in unskilled or semi-skilled work. True, this is a gigantic task considering the vast multitude of people living in different socio-economic and regional contexts with their own distinctiveness and challenges. In this regard, pro-

grammes such as COE need to be streamlined in terms of organizational effectiveness, quality training transaction through a planned and constant capacity building of instructors, a robust industry interface, provision of state of the art training infrastructure, effective equity assurance plan and a more proactive leadership at the institutional management level.

A thought-provoking comparative study of prevocational education in four countries (Pilz et al. 2016), concludes that from a comparative perspective, approaches to pre-vocational education differ in both theory and practice, since they fulfil very different roles in society and in the training system. Pre-vocational education will, therefore, continue to develop only on a country-specific basis. From a research perspective, it is surprising that that pre-vocational education has received so little attention in comparative studies, given that the findings are rich and generate plenty of material for the international training policy debate.

In India and China, vocational training is often equated with manual or craft labour and as shorthand for poorly-paid, hard, dirty work. This also contributes to the low status of pre-vocational and vocational education provision and a primary focus on academic training for white-collar jobs. The situation in Germany is quite different: traditionally, vocational training is respected as highly as academic training, so pre-vocational education is not stigmatized but regarded as an important foundation for finding employment. As per a study by Federation of Indian Chamber of Commerce and Industry (FICCI 2012), the four A's required for galvanizing skill development scenario are Availability, Accessibility, Adaptability, and Acceptability.

The industrial and labour market trends clearly indicate the necessity of strengthening of vocational education in India on a priority basis. The introduction of vocational education at secondary level through bivalent schools will enable us to broaden the vocational education base at secondary level of education and help create potential skilled workforce. Framing of vocational qualification framework, introduction of vocational degrees and setting up of a Vocational University with polytechnics, Community Colleges, Community Polytechnics and other Vocational Education Programmes as affiliated colleges are some of the recommendations which require further deliberation. The poignant goal of the present government, 'Make in India' (which includes major new initiatives designed to facilitate investment, foster innovation, protect intellectual property, and build best-in-class manufacturing infrastructure), further necessitates the revamping of the educational system through institutionalizing professionally planned skill development education programmes including ITIs where quality and competitiveness forms critical guiding forces.

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Chapter 9

Theories for Practice: A Participatory Action Research Approach for the Establishment of the Regional Association for Vocational Teacher Education in Asia (RAVTE)

Thomas Schröder

Abstract The RAVTE is a civil society organization with 25 member universities and institutions from East and Southeast Asia, which are actively involved in Vocational Teacher Education (VTE) and in research on Technical and Vocational Education and Training (TVET). RAVTE was founded by delegates from 14 universities in nine countries from East and Southeast Asia. They signed a common constitution on the 28th of March 2014 on the premises of Rajamangala University of Technology Lanna in Chiang Mai/Thailand. Since then, RAVTE has established organizational structures, developed a Strategy and Action Plan 2015–2018 and started operations. To date (10th of May 2015), nine additional universities and polytechnics involved in VTE and in research on VET have joined the association. RAVTE, as an organization of the civil society, focusses on improving the VTE and consequently TVET systems in the Association of Southeast Asian Nations (ASEAN) – region and beyond. RAVTE intends to support the political agenda with respect to the establishment of the AEC at the end of the year 2015, by contributing with research-based evidence and policy recommendations in order to enhance mobility and mutual acknowledgement of certifications in the region. The article provides an overview of the development of RAVTE, with a focus on the action research processes and the underlying theoretical approaches. Since RAVTE is a start-up, it is considered relevant to present, in the latter part of the article, RAVTE's emergence as the result of the common development process. This article is not based on research nor does it intend to conduct a policy analysis. It is rather delivering a blueprint for development, which is based on participatory action research and underlying theories.

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1 Introduction

The establishment of the RAVTE on 28th of March 2014 was the outcome of a development project named the Regional Cooperation Platform for Vocational Teacher Education in Asia (RCP), which was operated by the Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) from April 2011 to April 2014. The project was funded by the German Federal Ministry of Economic Cooperation and Development (BMZ).

Projects related to international development cooperation are by its nature development rather than research projects. Nevertheless, the author, who has a research background in the field of vocational education and who was responsible for directing the project, operated the project within the cycle of participatory action research (Lewin 1946, 1952; Kemmis and McTaggart 2000), using it as an approach to encourage participatory development and thus initiate informal, experience-based learning and thus capacity building within the targeted Community of Practice and with regard to Organizational Development (OD).

Action research aims at societal innovation, which involves multiple stakeholders and – most importantly – real people with their involvement, their interests, their hidden and open agendas and with their organizational and political constraints. Action research comprises two major phases: an initial development phase and a consecutive research phase. Scientists and practitioners closely collaborate in achieving the development goals. The researcher is in the difficult situation of having to change roles during the course of the project. Initially it is hands-on involvement in the development of societal innovation and later it becomes necessary to change to the more distant role of the objective researcher (Molzberger and Schröder 2005), mostly conducting qualitative empirical research in a formative research and development design. Unfortunately, the research part in action-research is often neglected. Action research is by its nature a process-related research and development approach.

Innovation is only sustainable if the involved individuals experience the innovation as a continuous development process, i.e. reflective learning process. There is obviously no point in entering another society and culture, and preaching from the pulpit. Changes, based on rhetoric, may appear to be functional as long as substantial funding is steering the people's behaviour. Sustainability can only be achieved, if the individual learning process is based on actual interest, mutual agreements and the common strive for solutions.

The group of universities that were the founders of RAVTE, had common interests with respect to an improvement of VTE, the establishment of vocational education as a self-reliant academic discipline, the conduct of research in vocational education, using the evidence-based results for reform, and the creation of regional standards for VTE in order to contribute to mobility within the AEC (2015).

This article does not focus on research or comparative research, despite the comparative elements that were employed during the formative stage of the development of RAVTE since 2011. The article discusses primarily two things. Firstly,

the theoretical foundation, which served as a structural frame throughout the development process and which is the first phase of the cycle of action research. Secondly, the article intends to provide detailed insight in the most important outcomes of the development process, which includes RAVTE's governing and membership structure and its forward looking strategies and policies.

2 Political and Societal Background in East and Southeast Asia

The ASEAN¹ is one of the most dynamic regions of the world, adhering to a broad diversity of cultural and religious norms, habits and attitudes, which stem from different historical backgrounds and from a wide variety of political systems. The transformation of ASEAN into a single market and production base that is highly competitive and fully integrated into the global economy (ASEAN 2008b) affects more than 600 million people in ten member states and is one of the most outstanding challenges in the history of the region. Furthermore, ASEAN is aiming to expand its regional economic architecture by including the ASEAN-Plus-Six-nations, China, India, Australia, New Zealand, Japan, and South Korea, and thus creating a free trade area that would account for one third of the global GDP (Toh 2009).

Guided by its motto “*One Vision, One Identity, One Caring and One Sharing Community*” (ASEAN 2008a), the community of nations is called upon to act politically and economically on an equal level in order to establish successfully the ASEAN Economic Community (AEC) by the end of 2015 (ASEAN 2014), allowing the free flow of capital, goods and skilled laborers. Thus, one of the major objectives is to enhance the mobility of highly qualified, skilled laborers in the region, which results in three main areas of cooperation: (1) the recognition of professional qualifications; (2) regional human resource development and capacity building and (3) the integration of industries across the region to promote regional sourcing (ASEAN 2012). Integration processes like the AEC presume a higher efficiency of the education sector at the regional level.

Human resource development in general and TVET in particular are expected to meet the social and economic demands of the emerging societies in the ASEAN region. Consequently, an adequate development of vocational personnel is of crucial significance for the further development of the TVET systems in the region.

VTE has a key function. The quality of vocational teachers determines the quality of the educated skilled workforce, which will lead towards higher productivity, improved quality and innovative solutions. TVET systems can only be successfully developed if vocational personnel with high qualifications and principal values are being educated and trained. It is essential to regard vocational teachers or, in its

¹Brunei, Indonesia, Cambodia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam

broader definition, vocational education personnel as agents of change, who take an active role in the further development of the TVET systems according to changing demand, which is based on economic, societal and technological progress (Songthanapitak and Schröder 2012).

Political decision-makers and institutions responsible for VTE in East and Southeast Asia and around the globe are required to address three simultaneous challenges: *quantity, quality and operational capability*. During the past two decades, numerous initiatives have been launched to identify and to address the challenges deriving from the necessity to develop TVET systems and VTE in the emerging societies of East and Southeast Asia. Most of these challenges are still relevant and include (Schröder 2013):

- Coordination, adaptation and implementation of regional political declarations on TVET and VTE in order to achieve concerted political actions on national and regional levels (e.g. Shanghai Consensus (UNESCO 2012), Kuala Lumpur Declaration (UNESCO 2015), Hangzhou Declaration (UNESCO 2006), Bandung Declaration (Dittrich et al. 2009), TVET-related SEAMEO and ASEAN work plans, Thanyaburi Statement (RCP 2013), etc.);
- Improvement and standardization of VTE and TVET in the region in order to facilitate workforce mobility through mutual recognition of certificates and learning experiences as a contribution to regional integration;
- Adaptation and qualitative improvement in the education of vocational teachers, in particular with respect to the enhancement of practical vocational competences and improving the transition from university to the workplace in the ‘vocational school, vocational college or training centre’; and
- The organizational upgrading and strengthening of (mostly technical) universities in charge of VTE, in order to generate sound research-based evidence, which will contribute to a continuous improvement in VTE and the development of TVET systems.

The RAVTE is strongly committed to addressing the above challenges and to support the development of high performing vocational teachers, trainers and managers and to foster integration and cooperation in the TVET sector in Asia and beyond on academic levels.

3 Objectives and Theoretical Approaches for Cooperation Within the Association

RAVTE is a regional non-profit organization focusing on the needs and interests of East and Southeast Asian nations. RAVTE’s vision is an effective and harmonized TVET sector policy for the region. This policy will address the ASEAN integration process, based on political consensus of all participating parties and will refer to regional standards and quality criteria in the TVET sector. RAVTE aims to emphasize the importance of TVET in general and VTE in particular at regional and

national level, actively contributing to the improvement of quality and efficiency of TVET delivery in the East and Southeast Asian region.

RAVTE intends to empower its member institutions as an expert community of practice, which contributes to the development of TVET through research and VTE in the region, specifically focusing on:

- The enhancement of quality and relevance of VTE, which includes institutional upgrading and cooperation with vocational schools and colleges as future employers. The goal is to incorporate pedagogical work tasks and processes into study programs, in order to increase practical didactical competences and to balance and combine theory and practice in order to increase the employability of VTE students.
- The establishment of cooperation between member institutions and industry in order to significantly improve practical vocational competences through hands-on-experiences from the real world of work as a solid basis for the planning and implementation of an action-oriented, participatory and processual vocational learning organization.
- The improvement of research activities in the field of vocational education (RVE), with a special focus on action-research. The research capacities of the member institutions in the region are comparatively underequipped. Some countries have well-established research capacities at their universities, which are reflected by the quality of the VTE programs and advanced TVET systems. RAVTE supports the region-wide establishment of VET as a self-reliant academic subject at the interface of a technological or economical subject and education. RAVTE promotes action-oriented research in order to have a real impact on the innovation of national TVET systems. Furthermore, the association enhances scientific cooperation in research activities, exchange and dissemination.
- The support of regionalization and integration processes through cross-institutional and transnational cooperation, through the dissemination of knowledge and best practices and through exchange of personnel and students, preferably on the basis of common standards and certificates.

RAVTE's organization and the working structure are based on a variety of theoretical approaches, which seek to combine input and process in an intelligent manner and ultimately determine defined methods of cooperation and collaboration, mostly combining process and input in a demand- and goal-oriented manner. All activities are directed towards individual and OD.

OD aims at the practical implementation of innovation and an increase of an organization's efficiency. It is a continuous, systematic process of organizational change in which the individuals of the organization are involved in a participatory manner with their learning subjects. OD is interdisciplinary and has developed a variety of approaches over recent decades such as Organizational Learning (Argyris and Schön 1978) and Knowledge Management (Nonaka and Takeuchi 1995). *Systemic consultancy* is the consultancy approach that is preliminarily used in OD.

Action research addresses societal problems such as the improvement of TVET systems as a whole or sub-systems as vocational colleges (Dehnbostel 1998). Applied methods and principles are the active participatory involvement of all stakeholders, recursive feedback cycles to initiate improvement and entering a common learning process. Researcher and practitioners cooperate closely. Research is conducted and new knowledge about best-practice is generated and prepared for dissemination (Molzberger and Schröder 2005). Action research is employed in model projects, which are focussing on societal innovation (Zimmer 1997), and may lead to relevant system reforms, if political decision makers are included in the development and research process (Boualinh 2013).

Action-oriented learning is a didactical approach in vocational education, widely used in order to enhance experiential learning (Dewey 1950). In formal learning settings action-orientation strives for more than mere action, which results from a task or a project. The approach includes participatory planning and reflection in order to enhance experiential learning (Jank and Meyer 1991). Action-oriented learning can be applied in informal in-company competence development strategies, as in work process embedded competence development called “Learning in the Process of Work”. In such informal learning settings, participatory planning and reflection also take on crucial positions (Dehnbostel 2007; Schröder 2009). Action-oriented learning as a didactical approach aims at competence development of individual learners in simulated or real working environments. Learning organization is based on work tasks. Work- and learning processes meld together (Schröder 2009). Although action-oriented learning has a variety of theoretical foundations, its underlying principles are identical with the principles of OD and action research, which makes it a perfect supplement at didactical levels. Action-oriented learning is often understood as antagonistic to walk-and-chalk-methods and input learning environments. A similar approach, called CDIO (Conceive Design Implement Operate), is widely employed in action-oriented engineering learning environments (Chalmers University of Technology 2013). RAVTE’s universities developed a concept for interregional *Scientific Coaching*, which aims at supporting research processes, enhancing its quality and addressing the participating researchers’ individual competence development. Scientific Coaching is employing the principles of work process-integrated “Learning in the Process of Work” (Schröder 2014).

On the level above organizations, *expert networks* have the capacity to enhance the effect of mutual learning and increase the exchange of expert knowledge and thus the development of common standards in regions. The potential of expert networks has to be carefully taken into account during the development and establishment of a regional expert network, as the Regional Association for VTE in Asia intends to become, namely because not all expert networks that connect function as such (Hearn and Mendizabel 2011).

The development of expert networks follows similar theoretical approaches and methods as described before. In order to set up, maintain and operate an expert network or a community of practice, it is necessary to create a common process, to concede degrees of freedom and to ensure the sustainability of participatory interaction and communication in an environment that enjoys flat hierarchies. Power games

and direct orders within a strict hierarchy will eventually diminish the capacity a network can unfold: common and mutual learning, creativity and innovation (Schröder et al. 2015; Engel and van Zee 2004).

The success factors for the development and operation of expert networks as a learning community are similar to the theoretical criteria, which derive from the approaches listed previously. They can be summarized as follows (Cumplings and van Zee 2005; Pinzás and Ranaboldo 2003; Guijt et al. 2003; Morrow 2002; Creech and Willard 2001; Padron 1991):

- Maintaining pertinence for the community of practice. Creating space for an open, honest and vivid discussion, which will ultimately lead to innovation at the basis of experimentation and learning.
- Ensuring added value by developing a distinctive profile focusing on a well-defined sphere.
- Creating an atmosphere of openness among participants. Allowing participants to make mistakes and to learn from them. Networking is a social action that increases its value by its members daring to share.
- Ensuring that participants have relevant skills, access and financial resources to participate in relevant activities.
- Participants must identify with the priorities of the network as their own. Participatory processes will lead to ownership, motivation, self-reliance and to typical bottom-up-developments. Initial self-reliance is the precondition for continuity and sustainability.
- Sharing common goals or problems in order to initiate a meaningful discussion among members, especially if they come from different cultural background.
- Creating clarity about the network's goals and priorities. Focusing on a limited number of achievable objectives.
- Setting up of a flexible organizational structure, which functions as an 'animator'. The role of the animator is to ensure the flow of information, to keep the participants engaged, to balance consultation or input, to push towards objectives, and to monitor activities and financials.

Initiating and maintaining a meaningful, dynamic and successful network is based on the readiness of participants to engage, to share and to participate and to be aware of the fact that it is necessary to establish and maintain flat hierarchies. The establishment of strong hierarchies and regulations is counterproductive.

4 Theory-Based Criteria and Guiding Principle for Development and Operation

Reflecting common development and operation, following guiding principles, which are based on criteria from theoretical approaches, proved to be factors in RAVTE's successful organization development:

Participatory structure and organization – a precondition for a sustainable development process, the self-reliant actions of involved stakeholders, and the mutual learning processes is that, without exception, all involved stakeholders are invited to participate in planning, decision-making, evaluation and reflection processes. All stakeholders will be in charge of implementing and operating commonly made decisions in their institutions, hence it is important that they are involved in such processes. Involvement of the stakeholders accelerates innovation and creativity. Furthermore, a participatory structure enhances motivation and responsibility, fosters the common learning process and a common acceptance of the intervention.

Multi-perspectival processes – broad involvement of stakeholders in all major activities creates a multi-perspectival development process, which ensures that a broad variety of relevant perspectives is included in the analysis, planning and decision-making process, to facilitate complete perception and enhance quality. It reveals what relevant knowledge of the stakeholders is at hand and needs to be actively employed. It is important to create an anxiety free atmosphere in which hierarchies can be overcome.

Reflection as a basis for the generation of knowledge – although experiential learning always occurs in action processes, the learner or the group of learners often remain unaware of their learning progress. Fresh knowledge needs to be systemized. Organizational or individual knowledge can be generated via reflection and this can be injected into knowledge management systems. Reflection is a prerequisite for the use of experience based competence development and the explication of implicit knowledge.

Methodical-structured, cyclical approaches – cyclically structured approach advances the learning efficiency of an organization and thus sustains new developments. The methodology of this approach is invariably cyclical, enabling the results of an evaluation to be reflected on in the light of individual experience and fed into improved working methods. The establishment of firm organizational structures and binding units, such as a class, research team, work group or steering bodies are a prerequisite.

Social support via colleague, teacher, consultant or coach – the various development, action or learning processes can be fostered by appropriate forms of social support. This could be a colleague, teacher, consultant or coach. Central to its success is an inductive approach that assists and strengthens learning guidance and realising potential rather than that ushered in by a top down procedure. The all-important task is to strengthen the potential of people to advance their insight of certain specific changes and ways of behaving. In all, this enables a method that is crucial in systemic consultancy approaches.

Balancing process and input – development processes or action-oriented learning processes or scientific work-processes can be described as goal-oriented in an environment conducive to learning. A goal is set and the process needs to be commonly designed with respect to the goal and the resulting change in conditions. In an ideal learning-conducive work environment, work processes can always be combined with competence development. The major challenge in establishing such settings is to accept that the combined work and learning-process is the main constitutive element of the various settings.

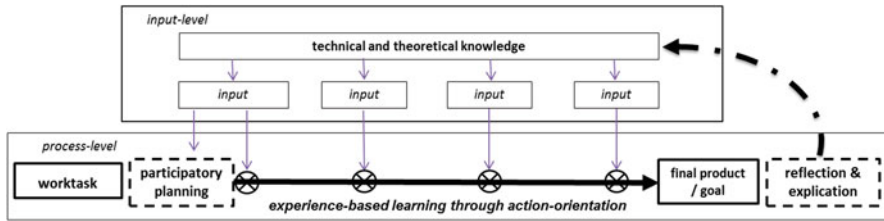


Fig. 9.1 Development and didactical process of combining theoretical input with experiential learning (Source: author’s own compilation)

In action-oriented vocational learning settings, the action process results from a work task, which is legitimized by the according vocational profile, or – if available – a work task-based vocational curriculum or training regulation.

The challenge is to balance the experience-based process with well selected inputs, which enable learners to solve a problem or surmount an obstacle and to progress in the action-oriented work process.

The necessity to balance process and input applies not only to action-oriented learning settings in technical and vocational education, but to OD, to action research and to systemic coaching too (Fig. 9.1).

In other words, the development of RAVTE as an organization, the commonly conducted regional research activities and the integrated capacity building measures such as workshops are based on the theoretical criteria shown above and guiding principles and a balanced ratio of process and input.

Furthermore, the continuous development of RAVTE as a dynamic expert network, carrying out cross-regional research, initiating reforms and building capacity for the improvement of VTE at university level needs to be operated by a clear and visible organizational structure with flat and balanced hierarchies in order to unfold its capacities.

5 Major Outcomes of the Common Building-Up Process

RAVTE as a start-up organization has achieved a number of relevant outcomes, which will be described below. RAVTE’s objectives, its activities and its governing and organizational structure are determined by the constitution, which is signed and acknowledged by all members.

5.1 Organizational and Governing Structure

RAVTE’s organizational structure is based on a constitution, which was signed by all founding members. New members are obliged to acknowledge the constitution, its instruments and procedures. The constitution is based on the idea of the

establishment of democratic values and balanced power. Each member is called upon submitting proposals that all members discuss and decide upon during common meetings like the *General Assembly*.

The *General Assembly (GA)* is RAVTE's highest body. It comprises one delegate from each member university. Each member has one vote each that cannot be transferred. The main strategic decisions are taken at the General Assembly Meeting (GAM), which has to be conducted at least once per year.

RAVTE is represented and managed by an elected president, who chairs the *Executive Board (EB)*. The EB comprises the president and three vice presidents, who are in charge of Public Relations, Human Resource Development and Research and Development. All members of the EB are elected by the GA for a two year term. The EB reports annually to the GA.

The EB may execute the right to nominate scientists, experts, politicians and representatives from donor organizations to become members of the *Advisory Board (AB)*. The members of the AB are expected to give advice, but they have no voting power.

The *RAVTE-secretariat*, which is located at the Rajamangala University of Technology Lanna, is responsible for the operation of RAVTE activities according to its constitution and the Strategy and Plan of Action 2015–2018 (RAVTE 2015b). The secretariat facilitates communication between partners, operates the homepage (www.ravte.asia), newsletter and its online journal TVET@Asia (www.tvet-online.asia). Furthermore, the secretariat is in charge of financial management according to Thai financial law and international regulations (Fig. 9.2).

According to the RAVTE constitution, the EB has to provide absolute transparency on RAVTE's financial situation at the GA meeting.

5.2 Membership and Cooperation Partners in ASEAN and China

At present, 25 universities and polytechnics, which are involved in VTE, from Cambodia, China, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand and Vietnam are members of the RAVTE (2015a). Potentially interested members-to-be will receive an application form to be filled in, signed and returned to the RAVTE

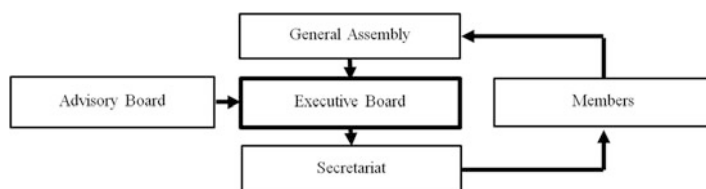


Fig. 9.2 RAVTE's organizational and governing structure (Source: author's own compilation)

secretariat. The EB decides upon the admission of the applicants. The decision is confirmed by the GA.

RAVTE achieved to establish close working structures with relevant regional organizations. It is closely aligning its policies with other regional organizations such as the [Southeast Asian Ministers of Education Organization \(SEAMEO\)](#), its [Regional Centre for Vocational and Technical Education and Training \(SEAMEO VOCTECH](#) in Brunei Darussalam), UNESCO Bangkok, Asia and Pacific Regional Bureau for Education, ASEAN University Network (AUN) and Colombo Plan Staff College for Technicians Education in Manila/Philippines (CPSC).

It is RAVTE's intention to coordinate its policies and activities with its regional partners in order to set up common initiatives and to ensure overlapping without creating major redundancies.

5.3 Strategy and Plan of Action 2015–2018 of the RAVTE

On 20th of March 2015, the GA developed and approved its strategy with eight major strategic fields for the first phase until 2018 (RAVTE 2015a). RAVTE intends to establish and consolidate its position as a major regional association for VTE in Asia. Therefore, the first strategy and plan of action focusses on advancing the transformation from a former project-based network (Schröder 2013) into a professional transnational body in the field of VTE and research on vocational education and training.

Following strategic fields were defined:

Strategy 1: Good Governance in VTE – RAVTE strives for national and regional good governance in TVET, in VTE and in research on vocational education. Therefore, RAVTE supports according developments:

- At national level (e.g. legal frame work, institutional harmonization),
- At ASEAN level (e.g. comparability of certifications and standardization of VTE), and
- At international level (ASEAN plus 3 etc.).

RAVTE closely cooperates with TVET decision makers from its member countries and with regional political organizations such as SEAMEO, UNESCO, CPSC and AUN in order to increase the political impact and to initiate reforms on TVET and VTE. RAVTE intends to contribute its own research towards evidence-based decision making. Regional activities and operations with national policy makers and international development agencies and donors will be supported and initiated.

Strategy 2: Upgrading of Capacities – Organizational and Individual Development – RAVTE supports the upgrading of capacities with regard to VTE and RVE, focusing on the OD of its member institutions and the competence development of researchers and lecturers. RAVTE intends to promote and facilitate cross-regional cooperative action-research projects, scientific coaching, research-bound workshops and international conferences in cooperation with partnering regional or international organizations.

Strategy 3: Research and Development – RAVTE promotes the establishment of Vocational Education as a self-reliant academic discipline at all member universities because it poses a precondition for an independent and sustainable development of regional VTE and TVET systems. RAVTE supports this process by initiating cross-regional research projects, which confront a relevant problem and thus lay the basis for evidence-based consultancy. Furthermore, RAVTE aims to generate and disseminate relevant knowledge, to establish a regional scientific community and enhance regional inter-institutional scientific communication. The strategy aims to establish a regional research network and to create a database for VTE and TVET-related subjects, which will support all members and interested users. The online journal TVET@Asia (www.tvet-online.asia) is RAVTE's Asian-wide instrument of dissemination and communication. The Online Journal functions as an open access platform covering TVET in general and VTE in particular.

Strategy 4: Regionalization and Integration – RAVTE intends to contribute to regional stability and integration of the ASEAN community by supporting the harmonization of regulations and standards. The association strives for the development and implementation of comprehensive VTE-standards, which will lead towards a Regional Qualification Framework for Vocational Teacher Education (RQF/VTE). The framework will enhance the comparability of learning outcomes in VTE and its mutual recognition, accreditation and certification, which will pave the way for students' and learners' mobility within the region.

Strategy 5: Cooperation and Exchange – RAVTE facilitates cooperation of universities and VTE institutions from Asia and overseas, with ASEAN institutions and with regional and international organizations. Cooperation among our members and between RAVTE and other international organizations like UNESCO-Bangkok, SEAMEO VOTTECH, CPSC is hugely important in order to avoid redundancies and to achieve efficiency in developmental processes. Close cooperation with international development organizations in the region, national governments and institutions from other world regions will be pursued with the intention of bundling capacity and potential for higher impacts and outputs in TVET. Furthermore, the full range of potential will be exploited to promote cross-regional study programs, exchange of students, lecturers and researchers and managers among regional institutions or with institutions from overseas.

Strategy 6: Quality Improvement – RAVTE enhances the quality of VTE with respect to action- and practice-orientation and sector-wide cooperation with enterprises, chambers and TVET institutions. RAVTE aims at increasing the attractiveness of the teaching profession in TVET and the enhancement of quality and employability of TVET teachers by reforming and redesigning VTE study programs. In line with the introduction of Work integrated Learning (WiL), RAVTE actively supports the ongoing establishment of dual study programs. RAVTE works towards an integrated system of quality assurance, preferably in cooperation with public and private companies, chambers and other professional membership organizations.

Strategy 7: Funding of Operations and Finances – RAVTE is a non-profit organization and a start-up. In order to finance ongoing activities and to initiate new research projects, RAVTE needs to acquire activity-bound budgets. RAVTE fully

complies with Thai law and tax legislation as well as with international financial standards. The GA as RAVTE's legislative body has agreed to strive for comprehensive transparency in financial matters. RAVTE management and all members commonly evaluate potential donors and acquire financial resources in order to implement activities of RAVTE as they are identified within the Strategy and Plan of Action.

Strategy 8: Performance and Sustainability – RAVTE's objectives were established with a long-term perspective. The first development phase, the foundation phase, is designed to run until 2018, which will be followed by a consolidation phase until 2020 and beyond. Outcome, performance, sustainability and growth will be assessed every year by the GAM.

The RAVTE secretariat and the coordinating structures of the association at all member universities will be gradually improved in terms of functionality. A continuous flow of communication is one key issue for success in cross-regional cooperation and will be developed further. RAVTE intends to provide comprehensive information on all related activities via its homepage www.ravte.asia and an Email newsletter.

6 Conclusion

RAVTE is an autonomous and independent organization, made up of 25 universities and colleges in East and Southeast Asia, who are responsible for the education and training of vocational teachers and research on VET. RAVTE was founded by delegates from 14 universities on 28th of March, 2014 in Chiang Mai/Thailand. RAVTE is still in essence a regional start-up, but whose goal is to support the regionalization processes with respect to VTE and TVET. The stage is set, but it is too early to analyse its impact with respect to regional development.

It is the desire and the will of the universities and colleges to cooperate, based on a common technical interest, to develop themselves as well as the training systems of their respective countries and the region.

RAVTE as an organization and the cooperation of the universities is characterized by the following criteria:

Unique Profile with Clear Objectives – The RAVTE-constitution clearly names the main objectives of RAVTE. Areas for action result from the objectives identified and are jointly adapted to the requirements and needs. RAVTE has three key objectives that indirectly aim at improving the technical and vocational training systems:

- Support of regionalization processes in ASEAN in the light of the AEC and beyond;
- Improvement and further development of VTE and vocational in-company personnel;

- Strengthening of research activities on technical and vocational education and training, the dissemination of new knowledge, findings and best practice and, in consequence, evidence-based reforms.

RAVTE possesses with these objectives a distinctive and unique profile in the region.

Strengthening Civil Society – RAVTE as a regional association with a clear, distinctive profile mainly consists of institutions, mostly universities, which are responsible for the training of vocational teachers. The universities have come together from a professional interest and cooperate in the fields of research on VET, the development of common standards and exchange of academic staff and students. Universities are not mandated by their governments, but want to take the political needs of their countries and the region into account. Universities have recognized that they are strengthened professionally and scientifically through their membership in the RAVTE.

Transparent and Democratic Organizational Structures – The universities' jointly developed constitution supports a democratic structure, which aims at a balance of interests of the members and transparency of their activities and organizational structures. Strategic decisions are taken jointly and the finances are used and managed transparently. The constitution prescribes the formation of various committees and functions, so that the power relations are balanced within the RAVTE. This is a key prerequisite for long-term cooperation. A change of the statute is only possible with a two-thirds majority at the annual General Assembly. Each university sends a delegate who has one vote. According to the constitution, votes cannot be transferred.

Research on VET – University research on vocational education and training is a key area of development in the East and Southeast Asia region. The organizational and institutional research capacities are developed to different degrees within the region. Societies in East and Southeast Asia region, which have extensively equipped university capacities in research on VET, also have more advanced TVET training systems. Through research relevant knowledge is generated, it is disseminated and can be incorporated in the education of vocational teachers. The setting up of appropriate PhD programs supports young scientists and young talent to the strategic level of TVET systems.

- RAVTE is committed to strengthening VET research in the region and for the dissemination of knowledge via TVET@Asia.
- RAVTE calls for the sustainable establishment of TVET as a scientific discipline in the universities.
- RAVTE supports evidence-based policy consultation through its research results.

Cooperation with Regional Organizations and Institutions – RAVTE cooperates closely with other regional institutions, such as the SEAMEO, the AUN, the UNESCO Bangkok and CPSC. Moreover, RAVTE cooperates with the line ministries of the countries, if this is technically required. This cooperation should avoid redundancies or content duplication and generate synergies, for example through joint conferences and workshops.

Cooperation with the Private Sector – RAVTE is certain that the quality of VTE and TVET as a whole needs to be improved through targeted collaborations with business enterprises. RAVTE supports and promotes cooperation with domestic and international enterprises, with regard to the improvement of VET in general and also with regard to the introduction of dual-cooperative study programs. Especially since there is a common sense that the practical vocational skills or competences of the vocational teachers must be strengthened, dual-cooperative study programs have the potential to address that challenge.

The establishment of RAVTE as a regional network of universities and expert groups produces undeniable advantages, perspectives and challenges, especially with respect to enhancing TVET through generating evidence and disseminating knowledge about procedures and best practices from a particular region and fostering exchange between regions. Members from one region often face similar and comparable problems and challenges, which is why networks often contribute vastly to innovation and development. The challenge that remains is to identify existing solutions and to transfer them successfully.

RAVTE, as a civil society organization, possesses the inherent capacity to enhance standardization of VTE and TVET, to support self-reliant development processes of national TVET systems, TVET organizations and individuals through a sustainable bottom-up process. If RAVTE is adapted and supported by government institutions in the region and successfully managed and operated it will lead to a fourfold benefits, positively affecting member institutions and experts, the network itself, the nation and the region in question.

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Chapter 10

Transferable Skills in Technical and Vocational Education and Training (TVET) and Vocational Teacher Education (VTE): A Case Study of Thailand

Nonthalee Prontadavit and Sirilak Hanvatananukul

Abstract The study aims to investigate the policies pertaining to transferable skills in TVET and curriculum for VTE in Thailand. Secondary data collection method was employed by which the existing acts and policies on education, the relevant agencies and reports on transferrable skills were reviewed. Further, the Thailand's Vocational Education Commissions' curricula also analysed using content analysis method. The findings of the study revealed that, even though notable initiatives and reforms taken at the policy level, still improvements are essential at implementation level. The findings are discussed with possible recommendations to take required measures at government, institutional and instructor levels.

1 Introduction

The rapid growth in economy and changing labour market situation in Thailand has recognized the transferrable skill as one of key element in TVET. The underlying reason is that employees should be able to adapt different work environment and enhances the opportunity for attaining gainful employment. The employers expect employees to demonstrate transferable skills in the workplace, also considers it as equally important as job-specific or technical skills.

Further, transferable skills enables an individual or employee in analysing problems and reaching appropriate solutions, communicating ideas and information

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effectively, being creative, showing leadership and conscientiousness, and demonstrating entrepreneurial capabilities. Thus, the transferable skills play a vital part in recruitment, performance assessment and career advancement. Transferable skills can be referred as the skills developed in one situation that is transferable to another situation which is often called as generic or soft skills. Thai employers demand transferable skills equipped to TVET and VTE graduates to cope with advancement of technology and changing labour market. The employees also should understand that their jobs are uncertain and insecure with fluctuating work conditions and, therefore, should always be prepared to manage such situations. Consequently, transferable skill plays an important role for graduates' employment (Walton and Mallon 2004, p. 84).

Thailand as one of the emerging economies, consistently takes required measures in the TVET system to meet demands of changing labour market. National Standards and Quality Assessment of Thailand has also emphasised to consider transferable skills as an important criterion in the assessment process for any occupation. The importance of transferable skills has been recognized in both, the Internal Quality Assurance (IQA) and External Quality Assurance (EQA) as indicators by the Vocational National Educational Test (V-NET) and the Office of National Standards and Quality Assessment (ONESQA).

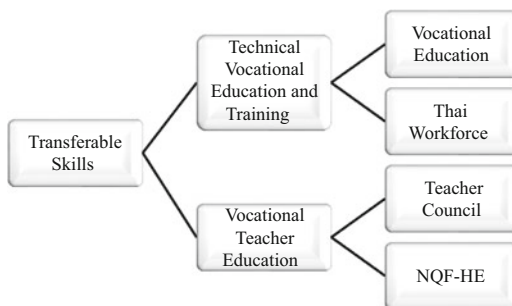
Mitchell et al. (1999, p. 118) proposed five skills which are essential for individuals in their career development. They are: curiosity, persistence, flexibility, optimism and risk taking behavior, which are known as transferable skills. Further, the authors believe that these skills would help employees when they face work related changes and challenges in the labour market. Hence, this research intends to examine the existing policy and laws on transferable skills in TVET and VTE and the extent of implementation in the Kingdom of Thailand.

2 Research Methodology

The study adopted a twofold approach. Firstly a careful review of literature on the existing policy on education related to transferable skills in TVET and VTE. To obtain the needed data, document such as reports, available data pertaining to the law and policies, and the Office of Vocational Education Commission's curricula were reviewed. Secondly, content analysis method was employed to find to what extent, transferable skills are embedded in curricula TVET and VTE. The following national reports are reviewed and the findings are presented. Considering the space, the scope of this paper will only focus on transferable skills in TVET and VTE which is described in the following sections:

- Constitution of the Kingdom of Thailand, B.E. 2550 (2007),
- National Education Act B.E. 2542 (1999),
- National Education Act B.E.2545 (2002; first amendment),
- National Education Act B.E.2553 (2010; second amendment),
- National-level education policies,

Fig. 10.1 Framework of transferable skills in TVET and VTE (Source: author's own compilation)



- Ministry of Labour's National Skills Standards (NSS),
- The Ministry of Education's National Qualification Framework for Higher Education, and
- Current curricula of Thailand's Office of Vocational Education Commission (OVEC) (Fig. 10.1).

3 Results of Literature Review and Content Analysis

The National Education Act (The Ministry of Labour 2002) of Thailand has clearly articulated the need and importance of transferable skills in the educational system to develop responsible citizens. The main objective is to develop people in terms of their physical, mental, intellect, knowledge, morality, integrity and to lead a prosperous life with harmony. It emphasizes that the transferable skills should be one of the key components in curriculum at all levels which attributes to human resource development and making people socially accountable for the growth and development of the country (Office of the National Education Commission 2014).

3.1 *Transferable Skills in TVET*

First the structure of TVET in Thailand is briefly described. TVET system in Thailand is fragmented¹, and it can be divided as (a) Formal (b) Non-formal and (c) Dual-vocational training which the successful candidates are awarded as Certificate (vocational education), Technical diploma (upper secondary) and Higher diploma (entry qualification for University) respectively (UNESCO 2011). Totally 415 public colleges and 427 private vocational schools/colleges are functioning where the average student enrolment is 0.7 million and 0.4 million accordingly. The consistent efforts through various policy reforms and its strategy to supply skilled workforce

¹The implementation of TVET in Thailand is shared by many ministries, public organizations, local administrative institutions and private organizations.

at various levels to the labour market accelerates the chances of becoming a knowledge-based economy. Therefore, the vocational education system of Thailand considers the quality and standards as vital criteria (OVEC 2008). While the Vocational Education Commission is responsible for planning, developing, implementation, monitoring and evaluate the standards for vocational education as IQA, the Office for National Education Standards and Quality Assessment (ONESQA) is responsible at the institutional level and to ensure indicators as EQA (Ministry of Education 2013).

(a) *Vocational Education Standard*

The OVEC has endorsed specifications of quality standards for vocational education in 2012 (OVEC 2012). The aim is to identify indicators to enhance, monitor and verify the IQA in vocational education system. The OVEC is responsible for conducting the V-NET at the institutional level, ensures by evaluating qualifications standards including transferable skills.

(b) *Thai Qualification Framework for Vocational Education (TVQF)*

The National Qualifications Framework for Higher Education in Thailand (Higher Education Commission 2006) is based on the educational guidelines outlined in the National Education Act. The framework is classified as Level 1: Advanced Diploma, Level 2: Bachelor's, Level 3: Graduate Diploma, Level 4: Master's, Level 5: Higher Graduate Diploma and Level 6: PhD. This framework combines types of learning expected from students, five learning domains such as Ethical and moral development, Knowledge, Cognitive, Interpersonal skills and Analytical and each domain's learning outcomes are discussed in ensuing passage. As the study is focuses on the transferable skills, it sheds light only in the entry levels.

Ethical and Moral development: At the entry level this domain enables students to understand the value system of morality of Thailand. It nurtures students with personal beliefs and values with individuals' responsibility towards family, community and the society as well. In the advance diploma (Level 1), learning outcome deals with individuals' acceptance of personal responsibility for taken action both as an individual and in a group situation. Further, the students should be aware of taken actions, its effects on others, appropriateness and the consequences. When it comes to the Bachelor course (Level 2), the learners should be able to addresses ethical and professional issues by moral judgements. Further, learners should be able to demonstrate a high level of ethical behaviour in a specific situation and possess honesty and integrity.

Second, knowledge domain which is mostly corresponds with subject matters of various disciplines and drive students towards higher or vocational education in the entry level. Students in the advance diploma (Level 1) are should attain in-depth knowledge of specific filed including theories and principles. The next level which is called Bachelor (Level 2), this domains' learning outcomes are such as comprehensive knowledge of specific field of study and recent developments, regulations and technical requirements.

Third, the cognitive domain's learning outcomes are a little similar to the knowledge component in which the students should be able to understand major concept, principles and theories and the ability to apply those insights to solve problems in the entry level. In advance diploma (Level 1), the cognitive domain states that students should be able investigate defined problems with acquired analytical skills, propose new approaches. Similarly, upon completing Bachelor (Level 2) the students should be able to imagine complex problems and recommend innovative solutions using relevant theory knowledge and practical experiences.

Fourth, interpersonal skills and responsibility enables students to be able to accept responsibility for own his/her behaviour and able to take initiative and work with minimum guidance in both academic and as well as for personal development. When the students come to advance diploma (Level 1), this domain states that they should think and act independently, but interacts constructively in a group. At this point, the learners should also demonstrate leadership quality in a small group, identify weakness in own knowledge and skills and plan for further learning. In Bachelor (Level 2) the learning outcome is structured where the learners could exercise group leadership in an undefined situation.

The last and fifth domains are analytical and communication which insist about effective communication both in verbally and in writing in the entry level. While in the advance diploma (Level 1) it corresponds with presenting arguments, analyses and conclusion in a right from, in Bachelor (Level 2) this particular domain is related to the use of relevant tools for investigation, techniques apply them creatively and properly suitable solution.

In summary, the transferable skills at each level are included in curriculum as follows. For the entry level, the learner should be able to understand his/her responsibility, analysing, communication, and usage of technology for individual daily life. When the transferable skills comes to next level i.e., advance diploma learners should have thinking capacity, demonstrating leadership qualities in small a group which are in addition to the earlier one. Further, at the bachelor's level the students should be able to maintain professional code of ethics, make moral judgments, investigate complex problems, offering creative and innovative solution, using technology in individual, group, community, social on daily life and occupation. From the above discussions it is explicit that the National Qualification Framework for Higher Education's learning has included transferable skills in the curriculum and emphasized the need of Thais' economic development and social wellbeing.

3.2 Transferable Skills in the Thai Workforce

While the economy grows with country's industrial expansion that human resource development is a major focus of the Thai government. The aim is not only to meet internal demand, but also to greater demand for high-quality labour in various emerging sectors such as automobiles and auto parts, construction, food, agro-industry and logistics. In order to reap the benefits, all the efforts should be linked

with skill development which is now of great need and cope with increasing demand of skilled labour in the country. Thus, the Ministry of Labour, Thailand has established the Professional Qualification Institute (TPQI), responsible for developing and implementing the NSS and Occupational Standard (OS) in the country (TPQI 2013a). The key functions of TPQI are to regulate professional (occupational/trade) qualifications are includes raising the standard of the professional (occupational/trade) qualification, standardize the professional qualifications and the system. It controls the education and training institutions by the accreditation and assessment system in which the transferable skills are also included in the process.

In addition, the Ministry of Labour has created the National Industry Skill Standard (NISS) in 2015, a subsidiary agency of NSS to develop national standards and strategically to establish Association of Southeast Asian Nations (ASEAN) and international standards. The primary role of NSS is to assess individuals' occupation skills using various assessment tools and provides certification.

The continuous efforts which taken with various stakeholders like entrepreneurs, government agencies and private organizations led for developing sector wise OS. The TPQI is an authorised agency to evaluate individuals' competencies and award qualification certification. It follows different evaluation criteria varies according to occupations for measuring competency level which ranges from basic to highest OS (TPQI 2013b).

3.3 Transferable Skills in VTE

3.3.1 Standards of the Teacher Council of Thailand (TCT)

The Teachers' Council of Thailand is legally responsible for professional standards that consists professional knowledge, experience, performance, conduct and ethics of the Teachers. TCT's function includes certify degrees, diplomas and certification of various institutions in accordance with the professional standards. The qualifications for persons who practice the profession must hold at least a degree in education or its equivalent or other related fields accredited by the TCT. Based on the above criteria, the teachers should have these criteria. For example, the Section 44 says that the qualifications of an applicant for a teaching license are as follows; (1) be at least 20 years of age, (2) hold a bachelor's degree or an equivalent, and (3) not possess any of the prohibited characteristics pursuant to section 44 (b) of the Teachers and Educational Personnel Council Act B.E. 2546 (Office of the Teacher Council of Thailand 2003). TCT provides a test as an alternative way to assist foreign teachers and field experts to qualify for the teaching license (Office of the Teacher Council of Thailand 2003). The Professional Standards for Teachers are four main standards required for teachers which are as follows:

- (a) Standards of Teachers' Knowledge: In 2013, the TCT amended eleven standards that a teacher must have knowledge: Teacher Professionalism, Educational Philosophy, Languages and Cultures, Psychology for Teachers, Curriculum,

Learning and Classroom Management, Research for Learning Development, Educational Innovation and Information Technology, Educational Measurement and Evaluation, Quality Assurance, and Virtue, Morality and Professional Ethics.

- (b) Standards of Teachers' Experience: Teachers are required to complete training on professional practice during study and subsequently teaching functions in educational institutions under an educational degree curriculum for a minimum of one year.
- (c) Standards of Teachers' Performance: Teachers must maintain the standards of performance: (1) Regularly practice academic activities related to the development of the teaching profession, (2) Make decisions to practice various activities, taking into account their consequences on learners, (3) Be committed to developing learners to reach their full potential, (4) Develop teaching plans for effective implementation, (5) Regularly develop effective instructional media, (6) Organize instructional activities that focus on permanent results for learners, (7) Systematically report the results of learners' quality development, (8) Conduct themselves as good role models for learners, (9) Constructively cooperate with others in their educational institution, (10) Constructively cooperate with others in the community, (11) Seek and use information for development, and (12) Create opportunities for learners to learn under all circumstances.
- (d) Standards of Conduct: Teachers are required to adhere to five ethics including personal ethics, professional ethics, client-centred ethics, collegial ethics and societal ethics

Teachers' performance includes making decisions, constructively cooperating with others in their educational institution, constructively cooperating with others in the community and seeking and using information for development. The transferable skills are engaged in the domains of learning s ethical and moral development, knowledge, cognitive skills, interpersonal skills and responsibility with analytical ability.

3.3.2 Thailand Qualifications Framework for Higher Education (TQF: HEd)

The Higher Education Commission prepared the TQF: HEd in which the transferable skills also are incorporated. This qualification framework addresses the areas of morality and professional ethics, responsibility of a professional in economics, society and the environment. Further, it facilitates an individual in terms of creative thinking for problem solving skills and demonstrates leadership skills.

The learning outcome indicators were designed in six domains of the educational field (Table 10.1).

As mentioned in the Qualification Framework for Vocational Education, Table 10.1 also shows that except the knowledge domain all the learning outcomes are focuses on the transferable skills of VTE students. Regardless of the framework

Table 10.1 Learning outcome domains of the educational field

Domain	Learning outcome
Ethical and moral development	Demonstrates virtue and morality, bravery, morality in situations involving value conflicts, honesty and integrity; in addition, follows the professional code of ethics and is a good model.
	Manages and solve problem with virtue and morality, professional by involving value judgements, is sensitive to others and is useful to the society.
Knowledge	Possesses a comprehensive, coherent and systematic body of knowledge in a field and the underlying principles and theories associated with it.
	Is aware of related knowledge and theory in other disciplines and, in the case of professional programmes, other professional fields. Is familiar with the latest developments at the forefront of specializations within the main field of study, including a critical awareness of current research related to the resolution of issues and the extension of knowledge.
	Preparing students for professional practice, students are aware of relevant conventions, regulations, and technical requirements and how these may be modified over time in response to changing circumstances.
	Is able to analyze, synthesize, and evaluate knowledge.
Cognitive skills	Is able to carry-out investigations, comprehend and evaluate new information, concepts and evidence from a range of sources, and apply conclusions to a wide range of issues and problems without external guidance.
	Is able to investigate complex problems and recommend creative and innovative solutions, taking into account relevant theoretical knowledge and practical experience and the consequences of decision making.
	Can apply these skills and insights in professional and academic contexts relevant to the field of study undertaken. In professional programmes, can use routine procedures appropriately but identify situations that require innovative solutions and draw on relevant theoretical and practical insights in response.
Interpersonal skills and responsibility	Accepts personal responsibility for actions undertaken and has positive thinking and social and emotional maturity.
	Contributes to and facilitates a constructive resolution of issues in group or team situations.
	Shows good leadership and is a good follower, has good relationship with students, and demonstrates responsibility for professional economics, society, and the environment.
Ethical and moral development	To analyse statistical and mathematical information, speak and write language according to understanding knowledge and problem with great rapidity.
	Be considered to evaluate, interpret and select information with continuous information technology.
	To effectively communicate through speaking, writing, and presenting with the appropriate model for different individuals.
Learning management skill	Skilled in variety and a creative model of learning management, including formal, non-formal and informal education.
	Skilled in variety model of learning management for individual different of student.
	Skilled in learning management of the field.

Source: author's own compilation with reference to Higher Education Commission 2006

deals with transferable skills in the curriculum, it is noted that the level of implementation and its effectiveness remains lack in higher education.

4 Discussion

TVQF recognized the importance of transferable skills to some extent, required by society to plan, to foresee the new changes, challenges and also respond to them. It is mainly due to the employees are also expected to be more innovative, emotionally balanced in the workplace. Hence, the TVQF has included the transferable skills to equip Thailand's workforce for the economic and social development.

As has been seen in the Sect. 3, it is implicit that Thai government has issued various regulations with respect to transferable skills in the TVET and VET. While the TVQF mostly focus on the macro or meso level, TCT plays the significant role at the micro level where the transferable skills imparts to the students. After two decades of implementation, TCT focuses on virtue, morality and professional ethics which are considered significant transferable skills for teachers in Thailand. As the notion of transferable skills are also attributes for poverty reduction, economic recovery and sustainable development, policy focusing on TVET is increasing as in other developed nations.

The transferable skills play an important role in the workplace where employees apply and react according to the situation. It often depends on the personal and situational characteristics, therefore, it is little hard to measure and evaluate the acquired transferable skills (Geng and Bai 2014). Therefore, some measures have to be taken at different levels such as national, institutional and teaching and learning as follows.

First at the national level, the V-NET should be refined with reward system by which schools and students are commensurately awarded for outstanding performances. Thus, reward systems may be established and incorporated into the existing policies. For instance, the evaluation scores on the skills transferability should be one of the main criteria in the selection process of applicants for higher vocational education. Second, the lack of implementation of specified regulations on transferable skills institution level requires an effective procedures and tools to assess the skill transferability of current students and graduates. Thus, educational institutions should develop an evaluation mechanism to apply the evaluation results to adapt the current teaching methods and a revised/new curriculum may be developed. Third, the instructor level, the present traditional model that places an emphasis on lectures and rote learning should be abolished and may be replaced with a more practical oriented, the activity-based learning model. This new model requires instructors to adopt teaching methods and design the classroom activities that foster thinking, problem solving and working process which are the basis for learners to prepare them for labour market. In addition, the learning model should monitor consistently and can be refined to improve the effectiveness.

5 Conclusion

This research is mainly focused on the policy of transferable skills in TVET and VTE and the degree of its implementation in Thailand. It can be noted in the above sections that TVET system in Thailand is recognized the importance of transferable skills for the current generation. From the review of policy documents and content analysis, apparently the transferable skills integrated in the Thailand's TVET curricula. Further, the Ministry of Education and TVET governing bodies emphasised and issued several regulations with respect to transferable skills. However, it needs to be improved in the implementation level to achieve the holistic development of the country. The involvement of all relevant TVET stakeholders is essential, and by ensuring effective implementation of policies related to transferable skills. A study on teaching learning arrangements in fostering transferable skills may be helpful to enhance the instructional and evaluation strategies. Comparative research on transferable skills in TVET may be explored between Thailand and other South Asian countries and developed nations. Such studies could leave room for improvement in the existing system by taking best practices based with context of specific country/region to adapt to the changes for a meaningful and productive development of the country.

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Chapter 11

Technical and Vocational Education and Training (TVET) in Bangladesh – Systems, Curricula, and Transition Pathways

Faruque A. Haolader, Khan Md. Foyzol, and Che Kum Clement

Abstract TVET in Bangladesh is gaining recognition as a vital tool for economic development as the country attempts to attain middle income economy status by 2021. The government is taking several measures to improve the quality of TVET and increase the enrolment in TVET programmes. In this descriptive study we focus on the TVET system, curricula, teachers' qualifications, current initiatives to enhance relevance of TVET, promote enrolment and female participation. Data was collected through secondary research, including study/project reports, curricula, brochures and research articles. The study was delimited to formal TVET sector including apprenticeship.

In Bangladesh, the majority of TVET programmes are provided at Diploma and Certificate levels in specialized areas through public/private/Non-Government Organisation (NGO)-run institutions. It is mainly school-based and government regulated, however industry participation in developing training standards and strengthening formal apprenticeship training are currently on the national agenda.

The curricula of Diploma and Certificate level programmes are organised subject-wise. The Diploma curriculum contains 41 % theoretical content and 59 % practical content and the curricula of Secondary School Certificate (SSC) (vocational (Voc))/Higher Secondary Certificate (HSC) (Voc) Certificate courses contain approximately 46 % theoretical content and 54 % practical content, excluding an industrial attachment training period.

Incorporating and building on the school based (traditional) methods of delivering skills, a new system has recently been introduced – the National Skills Development System (NSDS). This includes a new National Technical and Vocational Qualifications Framework (NTVQF), uses a competency-based training

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and assessment (CBT&A) approach and includes Recognition of Prior Learning/Recognition of Current Learning (RPL/RCL). The training standards for NTVQF qualifications are made up of stand-alone units of competency.

Several initiatives are being taken by the government and donor agencies to increase the enrolment and encourage female participation and gender equity in TVET. The authors suggest studies on the performance of TVET institutions in implementing the curricula and the outcomes of these initiatives.

1 Introduction

TVET plays a crucial role in the economic and social development of a country by providing the labour market with skilled human resources and enhancing the productivity and competitiveness of the workforce.

In this article we describe Bangladesh's TVET system, and the structure of the TVET curricula in the formal TVET sub-sector, answering the following basic questions:

- Which TVET models/systems exist in Bangladesh?
- Who are the TVET providers and who are the people actually delivering skills?

Several empirical research studies on TVET have identified a number of major weaknesses in the traditional method of formal TVET provision. These include: Insufficient TVET teachers with adequate professional preparation in both subject matter including practical skills and teaching methods, and with professional ethics and attitude; weak academic supervision, weak teacher's and institutional accountability; insufficient quality textbooks and lab equipment; (extremely) weak co-ordination among different levels of education (primary, secondary, tertiary) and also among institutions and teacher-student communication; unsatisfactory level of students' basic competencies at entry-level, unavailability of self-learning facilities at TVET institutions, e.g. Information and Communication Technology (ICT) facilities, improper licensing, and inadequate attention to research, etc. (ADB 2008; Elbushari and Aktaruzzaman 2012; Haolader and Nickolaus 2012; Kashem et al. 2011; Khanam and Shamsuddoha 2003; Rafique 2014; World Bank 2007).

The above mentioned issues/problems have been repeatedly stated in one form or other by some other studies as well. For example, a survey conducted by National Skills Development Council (NSDC 2015) over a period of 2013–2014 sees “a mismatch between the outputs of the TVET system and the needs of the employment sectors”. The survey argues that this state of mismatch is due to many factors which include ineffective teaching of practical component of the curriculum since majority of TVET teachers lack pedagogical training and practical skills and have no industrial experience, poorly equipped workshops, and lack of quality learning/teaching materials (NSDC 2015, p. 12). The World Bank (2013) conducted a formal labour market survey and reports:

Mismatches between the skill requirements of the labour market and the skills available; between the prerequisites for a quality work force and the focus areas of pre-employment education and skill building; between the skills being demanded by students and those that are being sought by the labour market; and between employers' and employees' perceptions of a high-quality, high-skilled, and effective worker. (World Bank 2013, pp. XXVIII-XXX)

The survey also reveals that, employers put huge importance on behavioural/personal skills, such as responsibility, communication, problem solving, and team work, together with domain specific technical/vocational skills. However, according to this report

both employers and employees have a low opinion of the institutions' training abilities because of yet-to-be-operationalized competency standards set for training and education programs. (Haolader et al. 2015)

Haolader et al. (2015) conducted an empirical research study focusing on learning/teaching materials and teaching practices in classrooms/labs in Polytechnics. The authors also measured polytechnic students' cognitive competences at various levels of Bloom's revised taxonomy of learning objectives. The study finds that the curricular focus is less on Applying level skills and more on theory oriented Remembering level of the cognitive process. The above findings support what the NSDP (MoE 2011) underlined about the current situation of skills development systems in Bangladesh (MoE 2011, p. 3). For example, it states that:

The existing TVET and skills training system has problems with the quality, relevance and scope of programs delivered (Paragraph 2.10, p. 3). In the current system, there is no nationally consistent approach to quality assurance, with current qualifications not based on standards that align with the occupations or skill levels in industry. (Paragraph 2.9, p. 3)

It also added that:

The skill development system in Bangladesh faces many challenges and issues, not all of which relate to financing or a lack of resources. Significant improvements can be made by implementing more effective and nationally consistent policies and systems of management and quality control. (Paragraph 2.12)

Given the current national focus on the importance of TVET, an increase in the quality of TVET programmes as well as in the enrolment statistics (from the current approximate 5–20 % in 2020) in TVET programmes are envisaged.

Therefore, in this article we also describe:

- How Bangladesh is attempting to improve the quality of TVET provision and increase the enrolment.

The article consists of five main sections. Section 3 introduces TVET and the factors that influence the system in Bangladesh. Section 4 describes the structure of the system. Section 5 presents the curricula structures of a number of selected TVET programmes/courses. The next section describes initiatives to promote TVET using incentives. Section 7 presents a brief description of the quality improvement initiatives. The article concludes with some suggestions for the improvement of the TVET in Bangladesh.

2 Methodology

This descriptive type of study gathers mainly qualitative data from several sources such as studies/surveys/project reports, homepages of relevant organisations, conferences/workshop papers, journal articles, books, curricula/syllabi, national skills development policy, etc. The findings have been discussed in several informal group meetings for checking its correctness and validity. National and international TVET experts, educators, administrators and other TVET professionals (managers, teachers/trainers) participated in these meetings.

The study primarily focuses on formal TVET at Diploma and Certificate levels. It does not include tertiary/higher education. The curriculum analysis was limited to only Engineering Technology/Trade with examples of Diploma in Engineering (Electronics Technology) and Diploma in Textile. However, throughout this chapter, reference is made to initiatives underway to reform the TVET system in Bangladesh.

3 External Factors Influencing TVET

Education programmes of a country are designed and implemented mainly for meeting the cultural and economic needs including aspiration of the people of the country (Rafique 2014). TVET, which aims to prepare a country's youth and adults for the world of work, is a subset of the whole education programmes. In order to make a realistic decision about the size and type of TVET, several external factors such as population, economy and labour market, among others, are considered to be the determinants and need to be analysed. Below are brief descriptions of these determinants.

3.1 Population Statistics

Bangladesh located in South Asia on the Bay of Bengal, bordered by India and Myanmar, is one of the world's most densely populated countries. It has 158,362 million people living in an area of 144,000 square kilometres, an area approximately equal to the size of Bavaria (Bayern 70,547 square kilometres, 12.0 millions) plus twice the size of Baden-Württemberg (35,751 square kilometres, 10.74 millions). The population is relatively young, with the 15–24 age group comprising 18.18 %, while 5 % are 65 or older. (BBS 2015). Figure 11.1 show population growth trends and population changes spawn in Bangladesh.

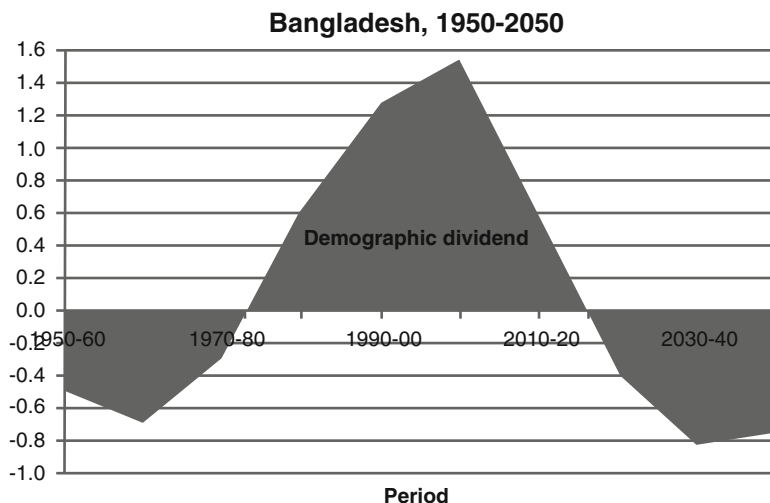


Fig. 11.1 Population changes spawn a demographic dividend for Bangladesh (Source: Navaneetham and Dharmalingam (2012). With permission of Springer)

3.2 *Economy and Labour Market*

Bangladesh was a success story in promoting employment for its growing population. Taking advantage of their abundance of relatively low-skilled labour, Bangladesh engaged in world markets through light manufacturing, which created wage employment in large numbers, while providing opportunities for rural migrants. The expansion of the light manufacturing sector has allowed for the integration of young women to the labour market. Agricultural modernization, labour migration, and social policies changed the jobs landscape of the country.

It is becoming obvious now however that these changes have not generated a major formalization overall and the amount of formal jobs has not increased a lot, on a national scale, over the past decade. Concerns are also emerging about increasing skills and productivity and moving, as a country, up the manufacturing ladder. The job market does not have sufficient demand for skilled or semi-skilled labour, which is posing problems for employment generation.

According to the World Development Indicators, 28 % of Bangladesh's population were residing in urban areas in 2010, which is considerably lower than the world average of approximately 50 %. Bangladesh is well on the path of rapid urbanization, however, which is already having significant impacts on its economy and the labour market. Employment and economic activities are becoming significantly more focused on urban areas. Bangladesh's urbanization is not widespread however; rather it has been confined to a few cities so far, mainly the capital city of Dhaka. This could be attributed to a highly centralized development approach, where local governments and councils do not carry out development activities.

A tracer study of the World Bank (2006, p. 29) revealed that the expansion of the VET system has not resulted in considerable improvement in labour market outcomes for its graduates. Only approximately 9 % of the participants claimed to be employed, while 47 % of them were unemployed. Approximately 45 % of respondents reported that they were pursuing additional education at various levels higher than their VET qualification.

3.3 Value of TVET in the Labour Market

Bangladesh has only limited natural resources, however, it does have significant potential in terms of human resources. In a report on Technical Education in Bangladesh, Oxtoby (1997) commented:

(...) perhaps more than any other country, Bangladesh has only human resources on which to base its future development.

The labour market worldwide is becoming globalised (Ray et al. 2007, p. 15). Bangladesh is currently working to diversify its own economy and work opportunities, with a priority on industrial development, but its citizens are also increasingly seeking work in other countries. The economy is largely dependent on foreign remittances, which now come in just after ready-made garment exports in terms of contribution to Gross Domestic Product (GDP).

TVET could become a powerful tool for turning Bangladesh's population into a workforce that could meet the needs of both national and international labour markets. As the demand for skilled manpower in international job markets continues to grow, TVET also presents a way for Bangladesh to increase foreign exchange earnings by exporting skilled manpower.

The government realizes the potential for employment for its citizens nationally and internationally as well as for TVET's potential role in increasing foreign remittances and has expressed in its new education policy that:

In an era characterized by the challenge of rapid technological change, globalization, economic uncertainty and diminishing resources, there is no alternative to education and training that complies with modern and international standards. Therefore, TVET has been assigned high priority in its National Education Policy – 2009. (MoE 2009)

4 The TVET System

TVET is provided through a variety of different methods and by a variety of different parties in Bangladesh. The system is mostly regulated by government, particularly in terms of formal TVET programmes. Some programmes rely on a traditional approach; other approaches are increasingly more responsive to market needs. Formal TVET is mainly provided through publicly funded TVET institutions,

however, private provision is also becoming popular. This is not dissimilar to the situation in other sectors in Bangladesh, such as health care and tertiary education, which are also seeing a rise in private providers.

TVET is primarily delivered in schools in Bangladesh. Some skills based training institutions and companies also provide non-formal and competency based training and assessment services. Apprenticeships, a combination of both school based and company based training, also exist and are currently being given priority by the present government. In other cases, TVET is handled entirely by crafts persons and their corporations/associations. This method is particularly common in the so-called informal sector of the economy.

Bangladesh's TVET system is rapidly changing and diversifying. The new NSDS, established through the Bangladesh National Skills Development Policy (MoE 2011), recognized problems with the quality of graduates and with the relevance of their skills (NSQAS 2012, p. 6). The new system is created to be more flexible, accessible, responsive to market demand, and offering higher quality programmes. The elements of this system are summarised in a recent publication entitled: Bangladesh NSDS – 2015 (NSDS 2015). In line with the reform goals, the government currently, together with international donors/agencies, is taking special initiative(s) to build the capacity of Bangladesh TVET professionals.

Starting in 2008, the Government's TVET reform project supported by the EU and the ILO conducted numerous studies needed to design the reform agenda (EU 2015). However, there is still significant work to be done to fully implement and upscale the new system. One specific area needing attention now is renewed quality research into TVET status in Bangladesh by specialised experts.

4.1 Pathways for National TVET System

The education system in Bangladesh is split into different streams and levels. Students enter into the system at the primary level, which ends at Grade V. Following this, they enter the secondary level (equivalent to International Standard Classification of Education (ISCED) two to three), which includes the Junior School Certificate (Grade VIII) and the SSC (Grade X) and ends at Grade XII.

There are a number of ways in which school students can enter TVET. At Junior School Certificate level, students can choose to go into the vocational stream and stay for two years at a Secondary Vocational School, which gives them the opportunity to eventually graduate with a SSC (Vocational). Students can also stay in the general education stream and at SSC level, they can go to a technical institution to pursue a Diploma qualification. They can also complete their (higher) education up to Grade XII or beyond and at that post-secondary level, an individual can go to a tertiary education institution to study for an advanced degree or a training institution to obtain a diploma. Moving to the technical/vocational education stream is entirely voluntary. The education structure and pathways for the various education and training streams are shown in the diagram in Fig. 11.2.

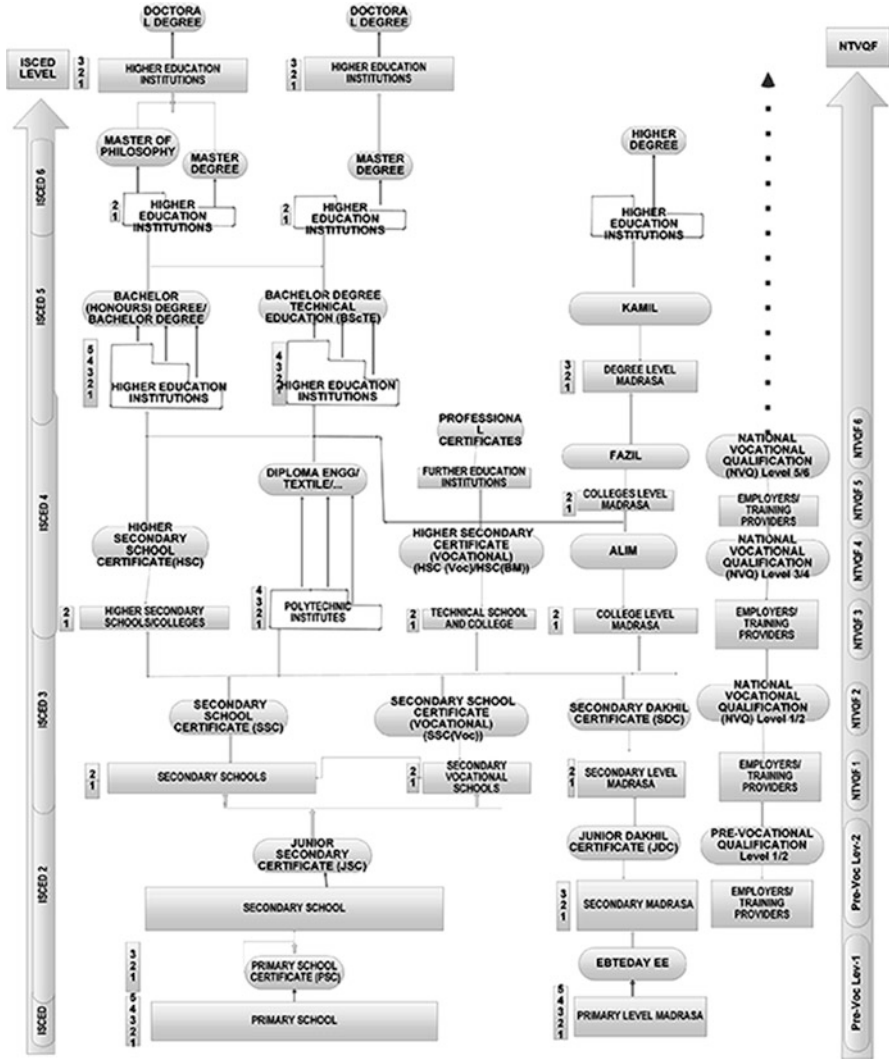


Fig. 11.2 Education Structure of Bangladesh (Source: author’s own drawing with reference to Bangladesh Bureau of Educational Information and Statistics (BANBEIS) http://www.banbeis.gov.bd/es_bd.htm)

Prior to the adoption of the National Skills Development Policy, persons who did not have Grade 8 level education could not access formal TVET. Entry requirements under the NTVQF are more flexible focusing on literacy/numeracy skills needed for the occupation for which training is provided.

Note the entry points are for: (i) Under-privileged groups, (ii) Low-educated groups (iii), Year eight entry (iv), Apprentice entry. At every entry point of NTVQF level qualification, persons/workers without qualifications are offered NTVQF

qualification through RPL/RCL, an approach introduced by the TVET Reform Project (ILO 2009; MoE 2011).

4.2 Government-Regulated TVET Provision

Government-regulated TVET programmes are offered both at Certificate and Diploma level.

Certificate level courses provide basic skills and focus mainly on manual skills. They are offered both in schools and workplaces. Students who complete Grade VIII may take the Two-Year SSC level in Vocational Education, SSC (Voc), which covers a similar set of basic skills. Students can then proceed beyond the SSC (Voc) to the Two-Year HSC (Voc), requiring an additional two years of secondary schooling after Grade X.

At the upper secondary non-tertiary level, three-year and four-year diploma-level courses are offered through polytechnic and mono-technic institutions (such as Bangladesh Institute of Glass and Ceramics, Graphic Arts Institute and Bangladesh Survey Institute). The qualifications at these levels (either Diploma or Certificate) are awarded based on student inputs (traditional course/subject based curricula), the duration of the programme/course (in number of years/months) and students' performance in exams/classrooms/labs. Students are assessed through continuous (formative) assessments and final exams (summative assessments). The administration of exams differs slightly between government and private TVET institutions in terms of seating arrangements. Exam candidates of government institutions sit in their own institutions for (semester) final exams, whereas for private institutions they must sit in a nearby public or private institution.

In addition to the traditional pathways to qualification detailed above, the new NSDS, introduced through the National Skills Development Policy – 2011 (MoE 2011), and passed by the Cabinet in 2012, also includes a variety of new methods to attain skills.

The system introduces the NTVQF and uses a CBT&A approach. CBT&A methodology is outcome-based, which differs from traditional input-based approaches.

The NTVQF describes a set of qualifications from Level 1 (Basic Worker) to Level 6 (Diploma level) (Table 11.1). It also has two Pre-Vocational levels that provide a pathway into TVET for those without Grade 8 education.

Under the National Skills Development Policy (2011), all formal TVET qualifications in Bangladesh are aligned to the NTVQF. For example, a Diploma in Engineering is equivalent to National Technical and Vocational Qualifications (NTVQ) Level 6 (MoE 2011, p.16).

The Pre-Vocational levels are rather unique and used in Bangladesh to provide an entry point for those who do not have adequate literacy and numeracy skills.

Table 11.1 National technical and vocational education framework in Bangladesh

NTVQ Flevels	Pre Vocational education	Vocational education	Technical education	Job classification
NTVQF 6			Diploma In engineering or equivalent	Middle level manager/ sub assistant Engr. etc.
NTVQF 5		National Skill Certificate 5(NSC 5)		Highly skilled worker/ supervisor
NTVQF 4		National Skill Certificate 4(NSC 4)		Skilled worker
NTVQF 3		National Skill Certificate 3(NSC 3)		Semi-skilled worker
NTVQF 2		National Skill Certificate 2(NSC 2)		Basic skilled worker
NTVQF 1		National Skill Certificate 1(NSC 1)		Basic worker
Pre-Voc 2	National Pre Vocational Certificate 2			Pre vocation trainee
Pre-Voc 1	National Pre Vocational Certificate 1			Pre vocation trainee

Source: author's own compilation based on MoE 2011

The following Sub-Sections describe the Governance of TVET, Access to TVET and Progression Opportunities, Target Groups, Typical Programmes, Providers, TVET Teachers, etc.

4.2.1 Governance of TVET

Governance of TVET in Bangladesh rests with the Government of Bangladesh. Formal TVET is regulated by a number of different regulatory bodies under different government ministries. According to research, it is offered under and regulated by more than twenty government ministries (Islam 2008, p. 13; Shears 2012, p. 8).

To oversee the activities of public and private TVET providers, the NSDC was re-established in 2008. This apex approval authority on skills development in Bangladesh, headed by the Prime Minister, provides leadership and sets government priorities. The NSDC is supported by a Secretariat and an Executive Committee (ECNSDC). The ECNSDC is co-chaired by a private sector representative, and the Secretaries of the Ministry of Education and Ministry of Labour. Members of the ECNSDC include representatives of relevant ministries and industry representatives (NSDC 2015).

Direct responsibility for overseeing the TVET system rests with two agencies: the Directorate of Technical Education (DTE) and the Bangladesh Technical Education Board (BTEB).

DTE is a government agency concerned with the human resource development of the country and is responsible for setting the overall policy framework of the entire TVET system, the overall administration and supervision of TVET institutions under the Ministry of Education, and interaction and coordination with industries, other government departments, national level institutions, and development partners (DTE 2015).

BTEB, a statutory agency, works under the supervision of Ministry of Education. It is responsible for maintaining the qualification framework and quality of TVET, recognition and registration of various types of TVET institutions, renewal of registration, accreditation of courses, student registration, setting training standards (and relevance to the labour market), student assessment, certification of results, and accreditation of TVET institutions, both government and non-government institutions (World Bank 2006, p. 11). BTEB conducts approximately 76 different course examinations involving approximately 51 curricula covering 6,300 public and private institutions (Talukder 2014).

Public TVET institutions have traditionally always been governed and monitored centrally, however this is set to change with the establishment of divisional/district level monitoring cells. More about TVET Governance structure can be found in Rafique (2014).

Although formal TVET programmes require accreditation by BTEB, any institution (public, private, or NGO-run) may offer training programmes and issue their own certificates. For example, the Bureau of Manpower Employment and Training (BMET), an attached department under the Ministry of Expatriates' Welfare and Overseas Employment, provides vocational skills development training programmes through its own Technical Training Centres (TTCs) and Institutions for Marine Technology and Shipbuilding. BMET also conducts school-based short training and apprenticeship training and awards its own certificates in all of its courses. These institutions also offer BTEB accredited formal vocational education and training courses for which qualifications are awarded by BTEB. Thus, the formal TVET courses at these institutions are under the control of BTEB. BMET oversees these regionally located training centres and institutions, among other functions (BMET 2014, p. 3). Similarly, the Department of Youth Development, Department of Textiles and other departments administer and hold responsibility for the inspection of TVET institutions under their concerned ministries.

The main argument for introducing the NTVQF is to have a framework and qualifications that are common among all sectors in Bangladesh and available to everyone involved in skills development. The country requires a framework that is not only used and recognized by stakeholders in Bangladesh but also by employers and accreditation bodies abroad.

In the formal sector, heads of TVET institutions (principals/directors) have always had limited autonomy. For example, TVET institution managers could hire part-time qualified (teaching) staff only; concerned higher authorities recruited

full-time teachers. Very recently however, steps towards changing these arrangements started to take place. Under a new arrangement, the Ministry of Education granted 64 Technical Schools and Colleges (TSCs) more independence in financial management. TSCs will now be able to provide contract training in response to local industry demand and generate finance for their own use; for example, to buy materials and supplies for regular programmes. Financial decentralization is part of the reform of Bangladesh's skills development system that is currently being undertaken by the Government of Bangladesh through the National Skills Development Policy and assisted by funding from the EU, Canada and other donors including the Swiss Development Corporation (ILO 2015).

4.2.2 Access to TVET and Progression Opportunities

In general, education providers and awarding organisations retain the right to set the entry requirements to individual educational programmes/qualifications so there is no automatic right to progress from one level to the next within the same or different track(s) of education and training. Possibility for transferring credit between qualifications is rare, and, if so, credit is only accepted at education providers' discretion and in line with awarding organisations' RPL guidelines.

For example, polytechnic graduates with Diploma Engineering Qualification can have access to some selected universities for Bachelor level program with exemption of some credits. Students with HSC (Vocational) qualification usually have access to Higher Educational Institutions for pursuing academic education provided they fulfil the entry requirements of individual universities.

Specially designed solely skills-oriented (one year/two years long) trade/training courses exist, offered by NGO/private run TVET providers, however, graduates with these qualifications usually do not have access to formal (higher level) education unless they progress through the NTVQF with Recognition of Prior/Current Learning (RPL/RCL).

4.2.3 TVET Provision to Target Groups, Typical Programmes and Providers

TVET is available at different levels ranging from introductory technical and/or vocational courses in secondary level TSCs to programmes at polytechnic and higher education levels. It can be found in the form of school-based programmes that combine general education with vocational elements, broad technical and vocational programmes and specialist occupational programmes that take place usually in school settings. TVET is usually offered on a full-time basis, however, part-time or evening trade programmes are offered by some TVET providers. Students typically attend courses on a block-release or day-release basis from employers or through evening or weekend training courses.

A wide variety of TVET programmes exist. The majority of them are delivered using the traditional subject based, time bound approach. Recently however,

programmes using a CBT&A approach have commenced, as part of the new NSDS (MoE 2011, pp. 18–19; EU 2015). The methodology is only currently being used in a small number of vocational training programmes in priority economic sectors, and qualifications are awarded at NTVQ Level 1 and 2 only. Some competency standards (curricula) of NTVQ Level 3 and above are already developed but technical training at higher levels is yet to start.

TVET is delivered primarily through polytechnic institutes, TSCs, institutions of science and technology and TTCs. The majority of institutions are privately run, with a small percentage being publicly run and an even smaller percentage run by NGO/not-for-profit organizations. See Table 11.2 below for indicative numbers.

Although institutions under private management make the predominant share of the TVET provisions, they are often marked with weaker performance compared to those under public or NGO management (NSDC 2015). Weaknesses are due in part to relative lack of equipment and qualified, work experienced instructors.

In addition to the existing institutions, both the BMET and the DTE are planning to build more than 250 new institutions (TSCs, TTCs and Polytechnics) over the next few years.

4.2.4 TVET Teachers and Trainers

TVET teachers and trainers are responsible for education and training delivery, student assessment and guidance and counselling of students. Different qualification requirements exist at different types of TVET institutions. Public level national exams for licensing and registration are not in place for the recruitment of teachers of TVET institutions in Bangladesh. Teachers for regular posts in government-run TVET institutions are usually recruited through a recruitment test conducted by a government recruitment agency or authorized selection committee. Prospective teachers must possess at least a Diploma level qualification in the relevant field to be a teacher at a public secondary vocational school, TSC, TTC, or polytechnic. An additional Diploma in Technical/Vocational Education (Diploma TechEd/Diploma VocEd) qualification is usually preferred. Although relevant industrial experience is

Table 11.2 Indicative numbers of TVET institutions

Sample of government TVET institutions	Sample of private training institutions
Polytechnic Institutes: 51	Polytechnic Institutes: 374
Technical School & College: 65	HSC (Business Management) Institutes: 1449
Technical Training Centre: 38	Secondary (Vocational) Schools: 1831
Textile Institutes: 6	Textile Institutes: 72
Agriculture Institutes: 13	Agricultural Institutes: 121
Forestry Institutes: 1	Institutes of Medical Technology: 163
Marine Institutes: 1	Trade courses: 1002
Textile Vocational Institutes: 40	
TOTAL: 212	TOTAL: 4870

Source: author's own compilation based on Shears 2012, p. 8

not a compulsory requirement for TVET teachers, a bachelor level qualification in the relevant field is desirable.

For teaching using a CBT&A approach at any NTVQ level, a teacher must have the same or one level higher NTVQ technical qualification, the Certificate IV in CBT&A, and at least one year industrial experience. Teaching qualifications such as a Diploma TechEd/VocEd, BSc TechEd/MSc TechEd, or NTVQ technical/teaching qualification are available from higher education institutions or from technical and vocational teacher training colleges in Bangladesh. Short-term teacher training also typically takes place in-house, and in the concerned government department. Individuals delivering courses at polytechnics, TSCs, TTCs or similar TVET institutions are generally referred to as instructors and individuals delivering work-based learning are called trainers.

4.3 Other Forms of Training

Apart from government regulated technical and vocational education, companies/enterprises also take responsibility for providing TVET for their workforces. This training is generally delivered through informal or apprenticeship type approaches. The type of training provided varies greatly, from induction training, to health and safety refreshers to technical, job-specific skills training.

4.3.1 Training Providers, Programmes, and Target Groups

A diverse range of organisations provide non-formal, informal or apprenticeship training in Bangladesh, including public and private enterprises, NGOs and not-for-profit organisations, some social-welfare organizations, health and care services, professional education and registration bodies and trade unions. Comprehensive information on all the companies that deliver training and the size and scope of their operations is not available. Several NGOs, not-for-profit organisations, and social-welfare organizations offer skills training to typical target groups such as youth, the underprivileged, and the rural population. This primarily consists of short-term skills development (three to six months duration) in income generating activities. Tailoring/sewing, embroidery, electronics are often offered to women and electrical, radio/television, mobile phone and motorbike repairing, and carpentry is offered to men. Industry bodies also provide training according to the needs of relevant industries and companies.

Many enterprises in the informal and formal economy are considerable providers of basic skilled, semi-skilled and skilled workers through on-the-job training. The scale of on-the-job training for new workers is significant. In some industries the figure is 20–30 % of workers at any given time (Islam 2008, p. 13, with reference to Rahman et al. 2008). Employers prefer recruiting apprentices and helpers who develop skills through work rather than formal training, and workers typically also

prefer to learn a trade while working because of the immediate earning and employment opportunity (Islam 2008, p. 13).

Some of the organizations providing highly specialized short and long training courses for variety of target groups are: Bangladesh Rural Advancement Committee (BRAC), Centre of Excellence Agro Food Skills Foundation (CEAFS), Chittagong Skills Development Centre, Centre of Excellence for Leather Skill Bangladesh Limited (COEL), Centre for the Rehabilitation of the Paralysed (CRP), Dhaka Ahsania Mission (DAM), Grameen, Mirpur Agricultural Workshop and Training School (MAWTS), Muslim Aid Bangladesh, Underprivileged Children's Educational Programs (UCEP)-Bangladesh and Help The Needy.

4.3.2 Apprenticeship Training

Though the current Labour Law provides clear direction for implementing apprenticeships, the annual registration of apprentices did not exceed 100 until 2008 and employers as yet have not adopted the formal apprenticeship training as part of the TVET system (Cordier et al. 2012). The government is currently endeavouring to increase the acceptance of apprenticeships through introducing various incentives, including financial benefits. The vast amount of skills training that takes place informally by employers in the formal as well as in the informal sectors indicates a high demand for skills based training, both from trainees and employers (Cordier et al. 2012).

To address this demand, the government is undertaking a number of efforts to extend apprenticeship training for potential trainees, particularly for those who strive to enter blue-collar occupations but cannot enter the formal TVET system because of procedural restrictions. However, new apprenticeship rules and strategies such as RPL are allowing more persons to become apprentices.

Currently, 9,500 apprentices from 50 companies have been registered under BMET and 1400 apprentices have been registered from 500 informal enterprises throughout the country (DeSilva and Ahsan 2015). Based on recent pilot initiatives of the GOB/EU/ILO TVET Reform Project and a consensus of major stakeholders, the existing apprenticeship system is to be modified. Considering the market demand which requires flexible approaches in contents and duration of apprenticeships (Cordier et al. 2012), proposed new concepts of skills training including dual system in Bangladesh with the following characteristics will be trialled (Table 11.3).

There has been some progress in promotion of apprenticeship training during the past few years, but expansion to national scale has not yet been achieved.

The TVET Reform Project and Bangladesh Skills for Employment and Productivity (B-SEP) Project are currently assisting the Government of Bangladesh through NSDC Secretariat to develop an "Apprenticeship Strategy for Bangladesh" (DeSilva and Ahsan 2015). Apprenticeship training using the dual system has not yet been declared a national priority.

Table 11.3 Characteristics of the new dual system training scheme

Objectives	To increase the supply of skilled workers in occupations as defined by companies and the respective industry sector
	To strengthen and expand the existing apprenticeship training paradigm in Bangladesh
Target groups	Girls and boys, including apprentices from the informal apprenticeship
	Minimum age 14 years
Sectors	All sectors of the economy
Size of firms	No restrictions for size of firms proposed
Duration	From six months to two years corresponding to NTVQF levels 1–4

Source: author's own compilation based on Cordier et al. 2012, p. 3

5 TVET Curricula

As mentioned earlier in Sect. 4.2., TVET in Bangladesh operates at Certificate (secondary) and Diploma (higher secondary) level. It is offered in a range of technical specialties, including agriculture, business, building and construction technology, clothing and textiles, electrical, electronics, computer, information and communication technology, food and nutrition and mechanical and automobile servicing. A complete list of occupations can be seen on the BTEB website. In the following sub-sections, the curricula of some selected programmes will be discussed in brief.

5.1 Diploma Level Curricula

The Diploma qualification corresponds to Bangladesh NTVQ Level 6 (MoE 2011) and can be referenced to the Upper Secondary Technical/Vocational Level 3B or to 4B qualification with provision of direct access to job market and to tertiary level of higher education (UNESCO 2011). Students who acquire SSC or equivalent qualification with minimum of 10 years of schooling (ISCED Level 2) can enrol for this *Diploma* programme. The duration of Diploma level programmes in initial TVET system varies from two to four years.

BTEB offers Diploma-level education and training programmes in several fields including Engineering, Textiles, Health, Agriculture, Fisheries, and Forestry. The Diploma in Engineering is one of the most popular programmes in Bangladesh and the demand for the Diploma in Textile Engineering is also rising (BTEB 2014). The curriculum structure of the Diploma in Engineering (Electronics Technology) and Diploma in Textile Engineering is discussed below.

Both programmes are four years long, divided into eight semesters, including one semester of Industrial Attachment Training. The curricula of these study programmes are organized based on the subjects they contain. Each subject has been allocated credits and contact hours. The total number of credit hours is 162 for each of the programmes. Subjects can be grouped into different categories, such as (1)

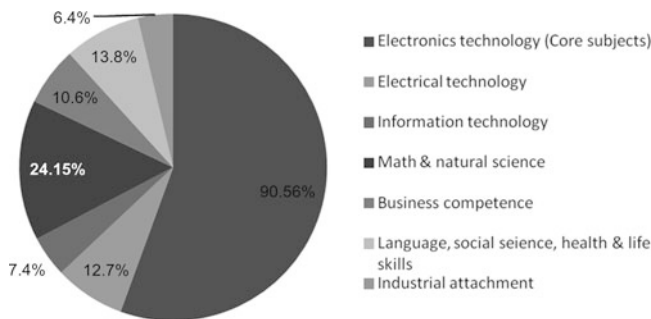


Fig. 11.3 Categories of subjects/distribution of credit hours in the diploma in engineering (Electronics technology) curriculum (Source: author’s own compilation based on BTEB (2015) Syllabus)

Domain specific (i.e. electronics related core subjects), (2) Cross occupational (i.e. Electrical Technology, and Information Technology), (3) Mathematics and Natural Science, (4) Business Competence (Business organization and communication, Book keeping and accounting, industrial management, environmental management, and entrepreneurship), (5) Language, Social Science, Health & Life Skills, and (6) Industrial training.

In general, most of the subjects consist of two parts: Theoretical and practical part. The theoretical part is taught in classrooms and the practical part involving tasks/assignments are conducted in laboratories/workshops. The credit hour and contact hour distribution of both programmes are shown in Figs. 11.3, 11.4, 11.5 and 11.6. As seen in Fig. 11.3 for Electronics Technology, 56 % of the total credits are allocated to the domain specific subjects (core Electronics Technology subjects), 11 % for cross occupational subjects, 15 % for Math & Natural Science, 6 % for business related subjects, 8 % for humanities subjects, and 4 % for Industrial Training. Comparing credit and contact hour distributions in Figs. 11.3 and 11.4, respectively, with those in Figs. 11.5 and 11.6, it is visible that both programmes have similar credit/contact hour distribution patterns in their curricula.

On the basis of 16 working weeks per semester, the sum of the contact-hours allocated for the four-Year Diploma in Engineering (Electronics Technology) programme was calculated at 4,080 (excluding Industrial Attachment period). One contact hour is usually 50 min. The bar diagrams in Figs. 11.5 and 11.6 show the distribution of contact hours in different subject categories of the Diploma in Engineering (Electronics Technology) and the Diploma in Textile Engineering programmes, respectively. Each pair of bars in a subject category represents theoretical contact hours and practical contact hours. The contact hours for the industrial attachment training are not shown in these diagrams.

Among the total 4,080 contact-hours, the theory and practical proportions are 1,680 and 2,400, i.e. 41 % and 59 %.

The industrial attachment (internship) training is held in the last (8th) semester. It is 16 weeks long and has two phases, in the first phase students are placed to

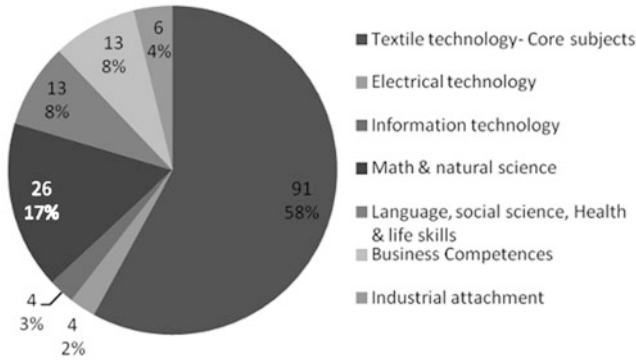


Fig. 11.4 Categories of subjects/distribution of credit hours in the diploma in textile technology curriculum (Source: author’s own compilation based on BTEB (2015) Syllabus)

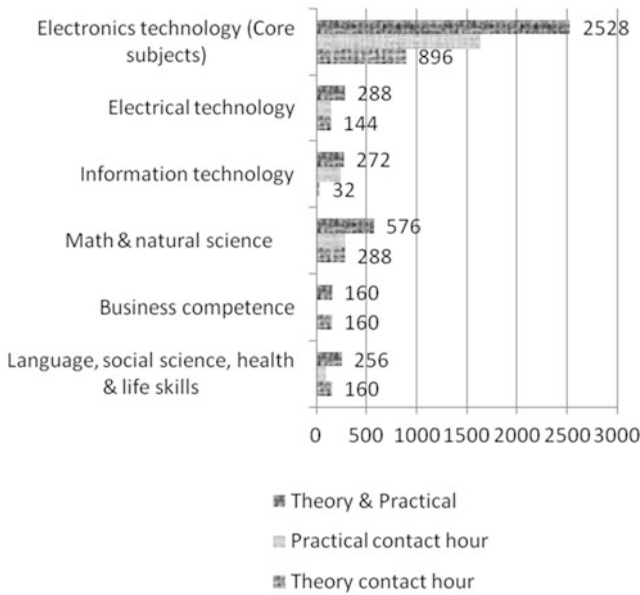


Fig. 11.5 Categories of subjects/distribution of contact hours in the diploma in engineering (Electronics technology) curriculum (Source: author’s own compilation from BTEB (2015) Syllabus)

industry/enterprise for 12 weeks. After completing this phase of industrial training they report to their institutes and in the second phase the training is held in their own institution’s labs for four weeks. In reality it has been found through interview with some students that the attachment period is not utilised effectively for practical oriented learning rather during this attachment time mostly theory is taught.

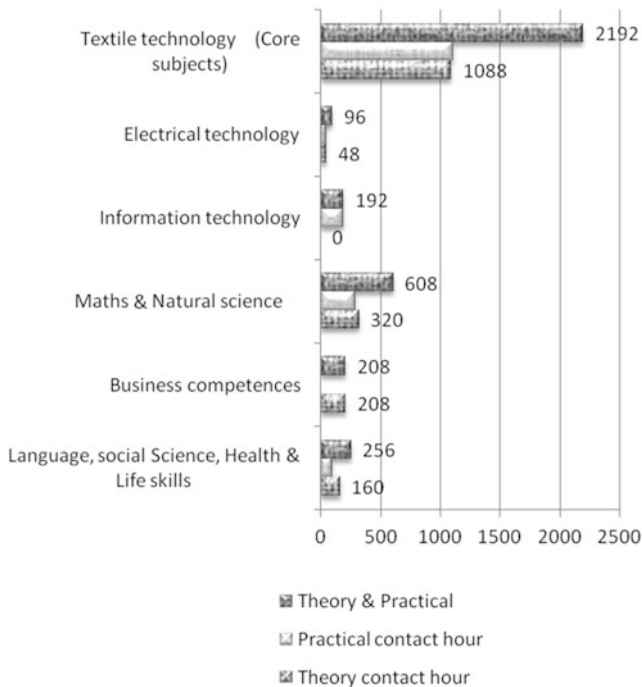


Fig. 11.6 Categories of subjects/distribution of contact hours in the diploma in textile technology curriculum (Source: author’s own compilation from BTEB (2015) syllabus)

Based on the above analysis it can be said that the Diploma curriculum is well organised and documented. It covers the core area of the occupation, the cross-occupational area, general/humanity courses, business/entrepreneurship related courses.

TVET curricula usually include content with different levels of learning objectives (Anderson et al. 2001; Bloom et al. 1956; Finch and Crunkilton 1999; Marzano and Kendall 2007, 2008, p.15; Krathwohl et al. 1973). Different types of tasks serve different learning objectives at different cognitive process levels.

To summarize, research results show that the Diploma in Engineering (Electronic Technology) curriculum focuses mainly on theoretical knowledge at the cognitive level ‘reproduction’ and ‘re-organization’, and not on the practical relevant skills at the ‘apply/transfer’ level. Unless teachers practice tasks that are real world relevant, students will only learn basic theories and principles (Haolader and Nickolaus 2012; Haolader and Paul 2013).

Table 11.4 Distribution of weekly contact hours in SSC (Voc) & HSC (Voc) curricula

Subjects group	Contact hours in SSC (Voc)			Contact hour in HSC (Voc)		
	Theory	Practical	Total	Theory	Practical	Total
Trade core subject	4	18	22	3	15	18
Information technology	0	2	2	0	0.5	0.5
Math & natural science	10	3	13	9	6	15
Language & others	6	1	7	8	0	8
Entrepreneurship	2	0	2	0.5	0	0.5
Engineering drawing	0	2	2	1	3	4
Total	22	26	48	21.5	24.5	46

Source: author's own compilation based on SSC (Voc) & HSC (Voc) Curricula of BTEB (2015)

5.2 Curricula of SSC & HSC Vocational (Certificate Level)

BTEB offers two-Year SSCs with Vocational Skills, SSC (Voc) and two-Year Higher SSCs with Vocational Skills, HSC (Voc) and HSC (Business Management), programmes through TSC, TTC, or similar institutions. The SSC (Voc) programme is offered in 31 trades and HSC (Voc) programme is offered in 14 trades. The entry requirement of the SSC (Voc) is Junior School Certificate or Junior Dakhil Certificate. After completing the SSC (Voc), students can go to general stream of education, can choose a HSC (Voc) programme or a Diploma programme of study. Graduates with HSC (Voc) qualification might go to the world of work or can pursue higher education. The curricula of these Certificate level programmes are organised subject-wise. Table 11.4 shows the amount of theory and practical contact hours of both programmes. The total number of credit hours per week in theory and practical in the SSC (Voc) are 22 (46 %) and 26 (54 %), respectively, and that in the HSC (Voc) are 21.5 (46.7 %) and 24.5 (53.3 %). That means the curricular focus on theoretical knowledge and practical tasks in both programmes is similar.

Although these programmes are designed to build students' vocational/practical skills, the majority of formal TVET institutions fail to prepare their graduates to an acceptable level for entry into the job market. This is mainly because

many trainers at vocational training institutes do not have any industry experience, they lack sufficient market knowledge, which is cited as something that is keenly lacking from graduates of secondary-level vocational institutes. (World Bank 2013, with reference to Hossain 2012)

The low levels of competency results partly from ineffective practical and theoretical classes and theory oriented, not competency-based, education/training and assessment (World Bank 2013, p. 155).

Students' academic achievement is assessed largely on rote learning of facts rather than practical skills. (World Bank 2013, p. 155)

However, initiatives are being undertaken to develop competency-based curricula and assessments to improve graduates' vocational skills and knowledge for entry into the workplace (see Sect. 7 of this article).

Table 11.5 Summary of proposed competency units and duration

Sl. No.	Category of competency unit	NTVQF level	Nominal duration (Hours)
1	Generic – Compulsory (5 UoCs required)	1–4	200
2	Sector Specific – Compulsory (5 UoCs required)		150
3	Occupation Specific – Compulsory (21 UoCs required)		850
<i>Total nominal learning hours</i>			1200

Source: author's own compilation based on BTEB (2016)

5.3 Short Courses (Certificate Level)

BTEB offers several short courses in a variety of durations, including one year, six months, three months and 360 hours. The 360-hours programme is offered in 53 trades and is often referred to as the basic trade course. A complete list of programmes can be seen on the BTEB website (www.bteb.gov.bd).

Competency Based Training (Curriculum) Standards of different levels of NTVQF qualifications for selected trades have been developed under the TVET Reform Project (EU 2015). (See also the current status at: www.btebcbt.gov.bd.)

Table 11.5 shows a summary of the competency units and duration for an occupation up to Level 4.

The effectiveness of this newly introduced CBT&A approach in Bangladesh compared to the traditional approach of TVET needs to be studied further before upscaling the new system which has shown initial promise.

6 Promoting Participation in TVET

Several initiatives have been taken to increase the rate of enrolment in technical and vocational education as a percentage of total enrolment in the formal education system.

Initiatives have also concentrated specifically on improving female participation in TVET, both in teaching staff and student numbers. One significant incentive is reserving 20 % of seats in courses for female students. Another is a recent directive to TVET institutions under the DTE to allocate 5 % of seats to persons with disabilities.

Other initiatives being implemented are listed below:

Government Stipend: 65 % of students in all public polytechnic institutes and TSC/TTC are financially supported, receiving Bangladeshi Taka (BDT) 905 and BDT 675 per semester (DTE 2015).

Incentives through projects: Institutes selected for financing under the Skills and Training Enhancement Project (STEP) receive a grant of maximum amount of BDT 7 million as an implementation grant.

Each institution receiving a financial grant is then also eligible for a performance grant. These grants (of up to BDT 1.4 million) are provided to institutions based on their achievements in terms of their student placement cell, expenditure level, number of teachers trained, and placement rate of students.

In addition, a stipend program is expected to support approximately 25,000 students a year for education with anticipated 8000 annual enrolments. Selected beneficiaries have to meet the following criteria to remain in the program: (a) maintain 75 % annual attendance; and (b) maintain 45 % pass marks in the annual examinations (DTE 2014a, pp. 2–4).

Support by STEP at a glance – Component –1, Window –1:

- 93 polytechnics (43 public, 50 private) have been selected for stipends and performance contracts signed.
- Up to December 2013, the project disbursed stipends among 75,457 students. From January to June 2014, all female students who applied for stipends received the support directly.
- 34 % intake increases in project polytechnic institutes.
- Selected 30 polytechnics (public-25, private-05) for implementation grant and performance contracts signed.
- 31,710 trainees received short course training and stipend @BDT 700 per month (DTE 2014b, pp. 51–52).

While these latter approaches are helpful, they are project based and temporary so more sustainable methods are needed to promote TVET as an option for trainees, their parents and guardians. For example, the Chief Executive Officer of the National Skills Development Council Secretariat has proposed that there is a coordinated communication strategy developed to promote TVET where Industry Skills Councils would also play a role so as to encourage young people to join their industry sectors. Experience in Bangladesh shows that events such as National TVET Week, skills competitions, job fairs, and of course media coverage promotes higher enrolment in TVET. At the same time, TVET institutions are being encouraged to establish career guidance cells and job placement units to help get their trainees jobs after they complete their programmes. Learning skills to gain employment is an important motivator in a country where about half of university graduates are unemployed.

7 Promoting Quality in TVET

TVET in Bangladesh has strengths as well as weaknesses. However, recognizing the importance of TVET, Bangladesh envisages not only for the increase of enrolment in TVET from current approximately 5–20 % in 2020 but also for the

improvement in the quality of TVET. In the NSDP and National Strategy for Accelerated Poverty Reduction, emphasis is given to the enhancement of workers' skills, which will ultimately increase the percentage of TVET graduates obtaining self- or wage-employment both in the domestic and international markets.

For achieving these goals the government with assistance from international donor community is trying to address the problems of the existing TVET system mentioned in the previous sections and have taken several initiatives/measures. For example, Bangladesh has the NSDP including a NTVQF as key commitments to the strengthening and further growth of skills development in Bangladesh. A national skills quality assurance system (BTEB 2012a, b), and curricula standards for selected occupations, which are job market relevant, are developed. The new system emphasizes job-oriented and need-based education (ILO 2014; EU 2015). Other ongoing initiatives include institutional restructuring and expansion, capacity building training for TVET professionals (managers, teachers, and lab technicians), introduction of a modern apprenticeship training programme, efficient management at all levels, as well as strengthening Information and Communication Technology use in TVET.

TVET provision under the reformed system, which adopts CBT&A training approach, enables engagement of TVET institutions with industries through industry skills councils (ISCs), industry to assess competency-based training (CBT) and to participate in new institution management committees. Through the introduction of NTVQF, the system has the provision to assess the existing labour force's skills by certifying their competency levels under the RPL program (ILO 2014, BTEB 2012a). RPL gives credit for competencies gained through previous learning through training or work and life experiences. Once workers' skill levels are certified, they can have access to further skills-building formal training opportunities or job in the formal sector (EU 2015; World Bank 2013, p. 172).

The country is benefiting from the effects of several major Skills Development Projects (SDPs) such as STEP, SDP, TVET Reform Project, B-SEP Project, which are variously funded by Bangladesh Government, the Asian Development Bank, the World Bank, the European Union, the Government of Canada, and other donors. Some initiatives are focusing on reforming the existing system with others strengthening infrastructure that can be used while the new system takes shape.

TVET and skills development continues to be of intense interest to both the Government of Bangladesh and the development partners.

8 Conclusion

TVET in Bangladesh is diverse. It covers a variety of occupations. Both the government and increasingly the market are taking the responsibility for the development of human resources of the country. It is gaining recognition as a vital tool for economic development. TVET and skills development more generally are an increasing

priority for both the Government of Bangladesh and international development partners.

For overcoming barriers to quality TVET in Bangladesh, this sub-sector requires, among others:

- Well-designed job market relevant programmes;
- Proper supervision of learning, strong individual and institutional accountability, and proper licensing of TVET institutions;
- Quality managers, sufficient teachers with adequate professional preparation in both subject matter including practical skills, and teaching methods, and with professional ethics and attitude;
- Sufficient and high quality textbooks and lab equipment;
- Good co-ordination among different levels of education and also among institutions, better teacher-student communication;
- A satisfactory level of students' basic competencies at entry-level and self-learning facilities at training institutes;
- Introduction of ICT to improve quality and reach of TVET, and
- More attention to research in TVET by specialised experts.
- (These suggestions are made based on World Bank 2013, 2007, 2006; ADB 2008; Khanam and Shamsuddoha 2003; and authors' own analysis.)

Furthermore, according to the structure of the curricula of both Diploma and Certificate level programmes, the practical content (calculated based on the contact hours) is between 54 and 59 %. The practical classes and the industrial attachment training are to be used more effectively for the development of students' practical competencies. To improve the effectiveness of the industrial attachment training one idea is to adopt a tool in formal TVET like the Competency Skills Log Book used in apprenticeship and to have the trainee, training institution and employer agree on its application. Similar arrangement of industrial attachment training/service for TVET teachers will help them acquiring current knowledge and skills demanded by the job market.

Maintaining the quality of the overall TVET system to ensure that improvements and initiatives are sustainable, coordinated and effective is of primary importance. The existing Bangladesh Quality Assurance System for TVET manual provides guidance. However, further studies on the outcomes of TVET/skills projects and the performance of TVET institutions in implementing the National Skills Development Policy including new occupational standards (competencies) are suggested.

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Part III
China

Chapter 12

KOMET-Based Professional Competence Assessments for Vocational Education and Training (VET) Teachers in China

Zhiqun Zhao, Zhixin Zhang, and Felix Rauner

Abstract In 2008, the KOMET competence assessment concept was introduced in China. The tests provide not only basic data about students' professional competence development, but also valuable references for policy making and discussion. This study tested and verified the usefulness of the KOMET competence assessment concept for Vocational Education and Training (VET) teachers, determined the levels and features of the professional competence of VET teachers, and analysed the factors affecting the development of their professional competence. The study proceeded in two stages: (1) a methodological test of the KOMET teachers' professional competence model and the assessment concept; and (2) an official test for assessing and analysing the professional competence of VET teachers in China. It shows that the KOMET test of VET teachers' professional competence is high in quality: (1) the test difficulty is within a reasonable range; (2) the test's discrimination is high; (3) the test's reliability is high; (4) the construct validity of the test meets the basic requirements for educational measurement. To improve the test quality, we need to consider how general approaches apply to specific domains, for example through improving the quality of test tasks.

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1 Introduction

Insufficiency of the continuing professional development of teachers is one of the major problems of the VET system in China. Commentators, researchers, and policy makers continue to decry the low professional competence of VET teachers and its negative implications for VET development. However, over the last decade, the central government, regional governments, and VET schools and colleges have initiated a series of training programs for VET teachers. Solely in the framework of the Training Program for Increasing the Qualifications of VET Teachers funded by the Chinese Ministry of Education, 150,000 teachers (representing 20 % of all teachers of this type) have been trained. However, the outcomes of the program have not been systematically evaluated because there is no measurement tool for assessing the professional competence development of the teachers.

In 2008, the KOMET competence assessment framework originally developed by the Technical and Vocational Education and Training (TVET) Research Group (I:BB) at the University of Bremen was introduced in China (Rauner et al. 2009). The tests provide not only basic data about students' professional competence development in different regions and at different types of vocational school or college but also valuable references for policy discussion. There is debate about whether the KOMET concept is also a useful tool for testing the competence (development) of VET teachers. This study tested and verified the usefulness of the KOMET competence assessment concept for VET teachers, determined the levels and features of the professional competence of VET teachers, and analysed the main factors affecting the development of their professional competence.

2 Research Background

2.1 *Present Research Status*

Although many studies have examined the professional competence structure and competence assessment for VET teachers, competence models and testing instruments with reasonable criteria remain undeveloped (Maag Merki 2008). In Europe, one of the priority areas for cooperation in education and training is the professional development of teachers and trainers. The European Centre for the Development of Vocational Training's Competence Framework for VET Professions, the qualification requirements for VET professionals, defines four core fields: management, training, development and quality assurance, and work relationship network (Vilmari et al. 2009). However, the Competence Framework is still not a scientific competence model. Otherwise, for the categories are broadly defined, it has only a limited practical function in guiding career development for VET teachers (Liu 2011). Many studies in the United States have investigated the professional competence assessment of teachers in primary and middle schools and in special

education. However, few studies have examined VET teachers. The guiding principle of teachers' professional qualification has now shifted from an input to an output orientation. Standardized tests have been combined with classroom performance observation with tools such as NTE (the Common Examinations of the National Teacher Examinations) and SID tests (the Simulation of Interactive Decision-Making) (Shannon et al. 1993). Practice shows that standardized test scores still fail to predict teacher performance effectively and that the costs of these tests are high (Rich et al. 1995, p. 96; Diez 2001, p. 31). For example, regarding tests on teachers' functional knowledge, SID tests can determine differences in explicit knowledge between experienced teachers and other well-educated professionals but are ineffective for measuring tacit knowledge and cognitive competence.

In China, researchers have formulated a "competence dictionary" for teachers of secondary vocational schools and the Behavioral Event Interview, a competence self-assessment questionnaire for specialized VET teachers (Xu 2008). These approaches are separate from the work situation, thus rendering it difficult to link the assessment results with teachers' real work. Hu (2012, pp. 56–80) developed a competence assessment plan under which teachers finish the teaching process of a course and must attend an oral defence. Although this plan is feasible in practice, ensuring the reliability of the assessment results only through observation is difficult without solid theories and an empirical basis. In addition, high costs hinder its widespread use. In summary, a professional competence model and an assessment instrument for VET teachers in line with reasonable criteria and practical demand would be of considerable value.

2.2 *Conceptual Clarifications*

In this study, the strength of professional competence diagnostics is the measurement of cognitive domain-specific performance dispositions in an occupation or occupational field. This study focused on measuring professional competences rather than evaluating professional aptitudes such as professional action competence and skill (a conceptual clarification is offered in Rauner et al. 2013, p. 4). VET teachers' professional competence comprises seeking holistic solutions to problems related to education and teaching work under real work situations (hereinafter referred to as "teachers' professional competence"). The study was implemented in 2014 in the provinces of Guangdong, Jiangsu, Zhejiang, Jilin, Hunan, Chongqing, and Beijing. 'Teachers' refers to those in VET institutions in China, including those who teach specialized courses and basic specialized courses in vocational secondary schools and vocational colleges.

The professional competence model of this study is based on the KOMET competence model (Rauner et al. 2009). Rauner also proposed a VET teachers' professional competence model (consisting of three dimensions) and a relevant test concept (including test tasks and 45 items; Rauner 2013) (Fig. 12.1).

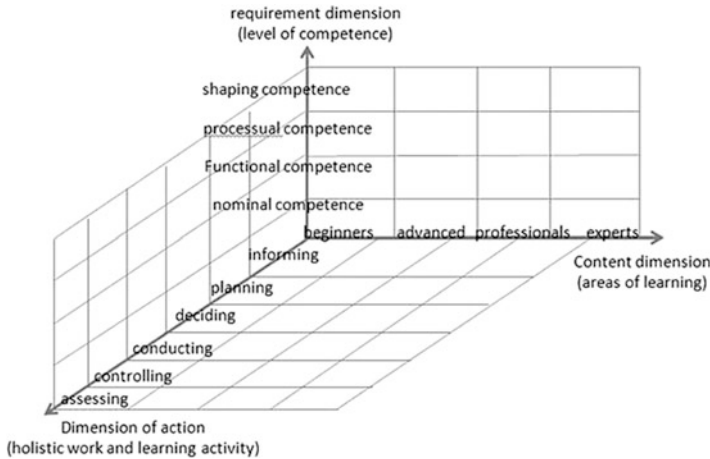


Fig. 12.1 Levels and criteria of professional competence: Competence Development and Assessment in TVET (COMET) (Source: Rauner et al. (2013); p. 42; Fig. 3.1. With permission of Rauner)

The VET teachers' professional competence model comprises three competence dimensions:

- **Requirement dimension:** The requirement dimension presents the levels of professional competence that build on top of one another. These competence levels are defined on the basis of skills that are associated with holistic solutions for professional work tasks. There are four competence levels: nominal competence, functional competence, processual competence, and shaping competence (Rauner et al. 2013, p. 41).
- **Content dimension:** The content dimension describes the content of teaching and learning in a specific subject or area as a basis for the development of test assignments (Rauner et al. 2013, p. 43). According to the recommendations of the German Conference of Ministers of Education and Cultural Affairs (KMK), there are four areas of professional tasks for VET teachers (2004): designing, implementing, and evaluating instruction; developing a curriculum; designing the learning environment; and participating in school development. In principle, they follow the progression of occupational development from novice to expert (Dreyfus and Dreyfus 1986).
- **Action dimension:** The considerable efforts in labour studies to develop a scientific foundation of this concept obscure that the category of complete professional action has a normative basis. A comprehensive action process entails the steps of informing, planning, deciding, implementing, controlling, and evaluating (BIBB 1991).

The IBB research team of the University of Bremen developed test tasks in three occupation fields: mechanical manufacturing, automobile maintenance, and electrical technology. There are two test tasks in each occupational field: design of a project's teaching arrangement and design of a learning environment (Rauner 2013, p. 14).

3 Research Process

This study proceeded in two stages: (1) a methodological test of the KOMET teachers' professional competence model and the assessment concept; and (2) an official test for assessing and analysing the professional competence of VET teachers in China.

3.1 *Verification of the Professional Competence Model*

It was necessary to verify the content validity of the KOMET teachers' professional competence model, making adaptive adjustments to its items and redesigning the tasks for a Chinese context.

Verifying the content validity of the model and items involved conducting an expert assessment by using questionnaires, interviews, group discussion, qualitative analysis, and quantitative analysis. After a questionnaire on the content validity of the competence model and items and an outline for interviews with experts were created, 12 experts on VET teaching and competence assessment were invited to offer their opinions and to amend the model items. Their opinions were simplified, and they confirmed or readjusted them. The average amendment rate of all of the items ranged between 14.3 % and 25.6 % (Zhang 2014).

We collected the professional tasks of VET teachers by reviewing relevant Chinese research projects based on the concept of *berufliche Aufgaben* (professional tasks) and the Expert Worker Workshop (Kleiner et al. 2002). These studies' classifications correspond with the four tasks determined by the German KMK but offer more detail such as instructional design and practice, development of teaching and learning materials, curriculum development, planning and design of the training sites, student management (Zhao and Zhuang 2012), and design and implementation of school-enterprise collaboration projects (Beijing Industrial Technician College 2011). The Germany-based test tasks were modified in the following aspects: Task No. 1 was changed to design of a project's teaching arrangement, which was more adaptable to the Chinese context; adaptive amendments were made according to the requirements of the two tasks (regarding teaching time and technical requirements); and adjustments were made to the wording.

3.2 *Pretesting*

3.2.1 **Design and Implementation of the Pretesting Scheme**

The pretest was performed to determine and improve the quality of the test tasks. In May 2013, a pretest was conducted at four schools in different provinces for two tasks: design of a project's teaching arrangement and design of a learning

environment. Assessment commissions, which typically consisted of heads of departments on teaching affairs or human resources, education assessment experts, and proctors, were organized at the four schools. It took the teachers three hours to finish both tasks. The test could be finished in one day or in two half-day sessions within one week. The proctors filled in a questionnaire on the examination site according to predetermined notes. A total of 167 samples were collected, with 140 of them being valid.

3.2.2 Scoring of the Pretest

Six expert teachers participated in scoring the pretest. Before the scoring, a one-day rater training was held. For each occupational field (mechanical manufacturing or automobile maintenance), two teachers' solutions to the two tasks were used as examples for scoring exercises. After the scoring and discussion, the consistency of the scoring was quickly improved, achieving and maintaining a high level ($F_{\text{inn,just}} > 0.70$).

3.2.3 Analysis and Improvement of Items and Task Quality

Items, Test Difficulty, and Discrimination Test difficulty included difficulty in the 45 items, the tasks, and the whole test. Similar to the cognitive tests, difficulty in the comprehensive task of the test was calculated according to the rated scores. The extreme group method was adopted to analyse and inspect the discrimination of the test. Items 13, 17, 18, 36, and 41 were determined to be high in difficulty and low in discrimination. Consequently, they were considered for deletion or revision according to their performance in the follow-up tests.

Amendments of the Tasks, Items, and Solution Space According to the analysis of pretest results and the opinions of the teachers and raters from the test, we amended the tasks, items, and solution space. The design of a learning environment task was generally of high difficulty for the group of teachers. Therefore, we lowered its difficulty accordingly. We reduced task barriers, added hints for completing each task, and changed their statements. In other words, the test tasks of the two occupational fields were the same; the teachers could complete the same tasks according to their own specialties, thereby maintaining a stable level of difficulty for the tasks while improving the comparability of the testing results of different occupational fields.

The items exhibiting high difficulty and low discrimination mainly covered new pedagogical concepts such as humanistic care and work process orientation. This observation is a reminder of the absence of humanistic spirit in traditional engineering-oriented teacher education in China and manifests the necessity of introducing new pedagogical concepts. In line with the guiding slogan of "Improving teaching quality through competence assessment" (*yi ping cu jiao*), we kept the

Table 12.1 Professional competence levels, criteria and items for VET teachers

Levels	Criteria	Items	Examples for items (1–5)
<i>Shaping competence</i>	9. creativity	41~45	Does the solution reflect the elements of vocational activities and the relationships between these elements?
	8. social and cultural background	36~40	
	7. acceptability	31~35	
<i>Processual competence</i>	6. efficiency and effects of teaching	6~30	Is the solution technologically advanced?
	5. quality control of teaching	21~25	Is the knowledge in work process (including explicit and tacit knowledge) fully considered in the solution?
	4. organization of teaching- process	16~20	
<i>Functional competence</i>	3. approaches and methods of teaching and learning	11~15	Does the solution fully make use of the technologically shaping space provided by the task?
	2. objectives and content of teaching	6~10	
	1. functionality in specialized domain	1~5	Is the solution practicable?
<i>Nominal competence</i>	None	No detailed item is set for groups of risk competence	

Source: Rauner (2013, p. 6)

guiding items. The difficulty of these items will be retested in a large-scale follow-up test (Table 12.1).

Constructing the competence model was a process of repeated amendment and improvement. Although the verified competence model is based on modern vocational pedagogical theories and although the whole model and all of the criteria were subjected to expert validity testing, it still required the support of data from large-scale empirical research. After adjusting the task difficulty and the items, essential changes were made to the solution space.

3.3 Official Test, Scoring and Data Processing

The procedure of the official test was similar to that of the pretest but on a larger scale. From the end of 2013 to the beginning of 2014, we recruited teachers in the occupational fields of mechanical manufacturing and automobile maintenance at 35 vocational schools and colleges from typical cities in the eastern, middle, and western provinces of China, including Beijing, Changchun, Taizhou, Wuxi, Guangzhou, and Chongqing. A total of 321 valid samples were acquired.

There were 13 official test raters. During the one-day rater training, the consistency of the scoring improved quickly, achieving and maintaining a high level. We used SPSS Version 18.0 software to conduct chi-squared tests, independent-sample *t* tests, ANOVA, and regression analysis and used Microsoft Excel 2007 to generate graphs.

3.4 Measurement of Professional Identity, Organizational Identification and Achievement Motivation

As a supplement to the competence assessment, the teachers completed two questionnaires (i.e., a background questionnaire and questionnaire on influential factors) to collect the teachers' relevant background information and their understanding of new curriculum concepts. The background questionnaire covered the measurement of professional identity, organizational identification, and achievement motivation. The questionnaire on influential factors was subjected to a small-sample pretest and a large-sample pretest. The results showed that its reliability, validity, difficulty, and discrimination were high.

4 Data Interpretation

4.1 Teachers' Professional Competence

Using the occupational field of automobile maintenance as an example, this section presents an analysis of the professional competence of the teachers.

4.1.1 Competence Distribution of Teachers

Among the 183 automobile maintenance teachers from vocational colleges, 9.29 % of them showed nominal competence, 7.11 % functional competence, 37.70 % processual competence, and 45.90 % shaping competence (Fig. 12.2).

There was a significant difference in the competence distribution of teachers from the three types of school (Fig. 12.3). The teachers from comprehensive vocational colleges mostly exhibited processual competence (60.98 %), followed by shaping competence (31.70 %). The results indicated that the teachers from these colleges are much more qualified than the other teachers.

Regarding the teachers from technician colleges in Guangzhou, 84.85 % possessed shaping competence, 15.15 % possessed processual competence, and none exhibited nominal or functional competence. These results reflected the higher quality of technician colleges in Guangzhou and its influence on vocational education (Zhao & Zhuang 2013).

Nearly half of the teachers from secondary vocational schools possessed only nominal competence (42.86 %), while 25.71 % of them possessed functional or processual competence. Only a few possessed shaping competence (5.72 %, mainly those from Guangzhou-based demonstrational schools). Most of the teachers with lower competence were from schools in rural areas, clearly indicating that the distribution of education resources is unbalanced in China (Fig. 12.3).

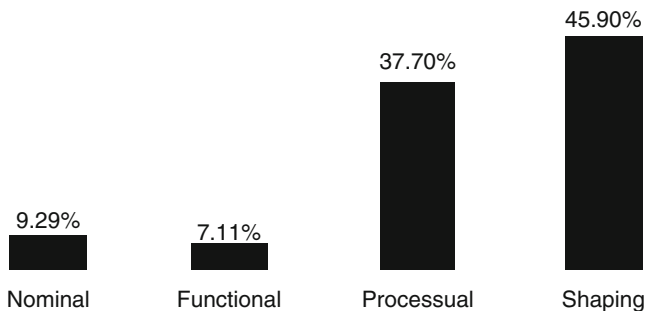


Fig. 12.2 Distribution of the competence of the automobile maintenance teachers (Source: author’s own compilation)

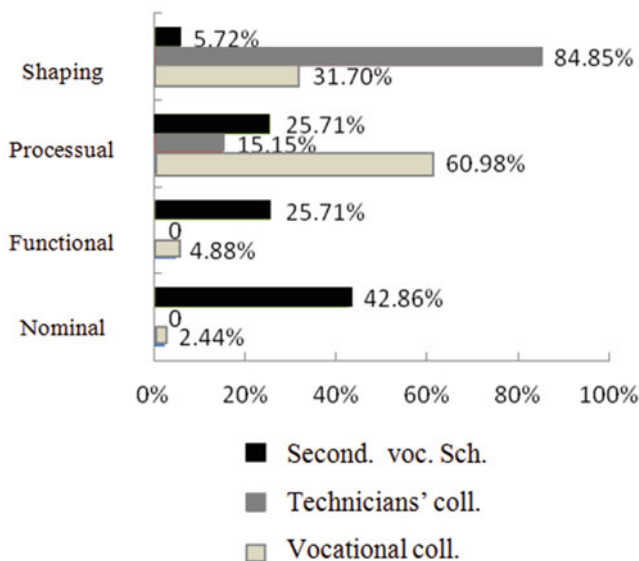


Fig. 12.3 Overall competence distribution of teachers from various vocational colleges and schools (Source: author’s own compilation)

Among the various colleges and schools, the average competency score of teachers from technician colleges was much higher than the overall average (45.87 > 38.40). The average score of teachers from vocational colleges was 38.96, similar to the overall average, whereas the average score of teachers from secondary vocational schools was 23.02, much lower than the overall average. Regarding the score distribution, the scores of teachers from secondary vocational schools were the most discrete, indicating that there is a wide gap in teacher competence between premium schools and common schools (in rural areas) within the same administrative district (Fig. 12.4). The scores of teachers from technician colleges in Guangzhou were comparatively concentrated, evidence of the educational and teaching reforms in

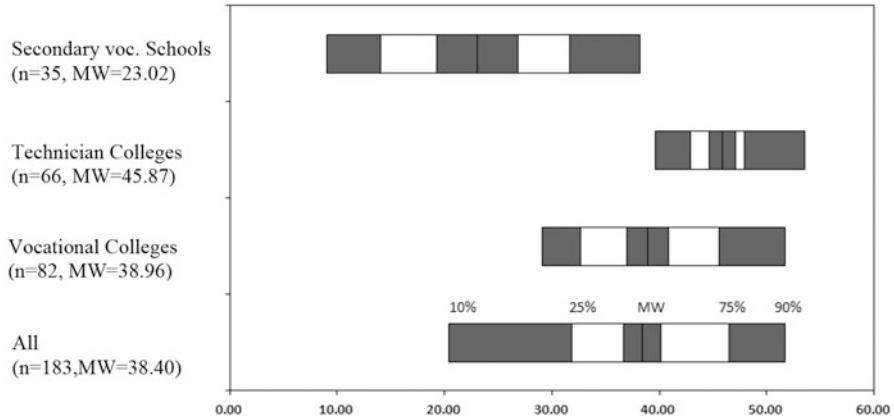


Fig. 12.4 Percentage distribution of professional competence of teachers from various vocational colleges and schools (Source: author’s own compilation)

those colleges. These distribution results are consistent with assessments of students’ professional competence in technician colleges (Zhao and Zhuang 2013).

The data showed gaps in the professional competence of teachers from various vocational colleges and schools in different regions. The narrowest gap in teachers’ professional competence was in Guangzhou, showing that the overall development of automobile maintenance in Guangzhou colleges is balanced and that the teachers have more opportunities for training and peer exchange. The difference in the professional competence of teachers from secondary vocational schools in Chongqing was substantial, showing the wide gaps between rural and urban areas as well as between different schools. Although there was a gap in professional competency scores of teachers from colleges in Beijing and Changchun, the distributions of the teachers’ professional competence were similar; this trend might be typical of vocational colleges (Fig. 12.5).

4.1.2 Profiles of Teachers’ Competence

Figures 12.6, 12.7 and 12.8 show the competency profiles of teachers from different colleges and schools. Regarding the aspects of professional competence, the teachers performed well in functionality in a specialized domain (PF1), objectives and content of teaching (PF2), and quality control of teaching (PP2), followed by approaches and methods for teaching and learning (PF3) and efficiency and effects of teaching (PP3). Their performance in organization of the teaching process (PP1), acceptability (PG1), and creativity (PG3) was weak, with their performance in social and cultural background (PG2) being the poorest. The secondary vocational schools scored lower than the technical and vocational colleges at three levels (functional competence, processual competence, and shaping competence) and nine

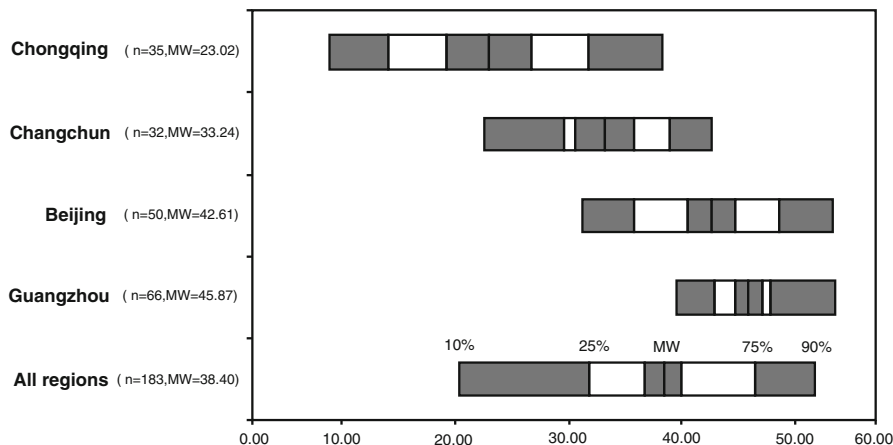
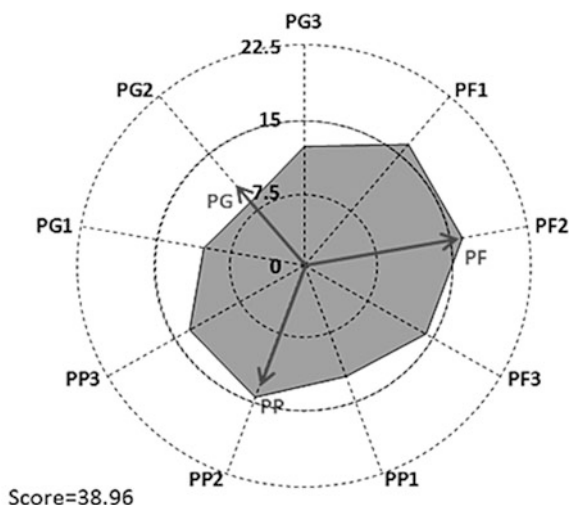


Fig. 12.5 Percentage distribution of professional competence of teachers from various regions (Source: author's own compilation)

Fig. 12.6 Profiles of competence of teachers from vocational colleges (Source: author's own compilation)



items. These results offer an accurate representation of the current VET system. The teachers from the technician colleges in Guangzhou performed much higher in acceptability (PG1) than did the teachers from other types of college. Because the Guangzhou colleges have maintained a favourable partnership with businesses (a time-honoured tradition), their teachers have a stronger sense of safety, environmental protection, and teamwork.

Fig. 12.7 Competence profiles of teachers from technician colleges (Source: author’s own compilation)

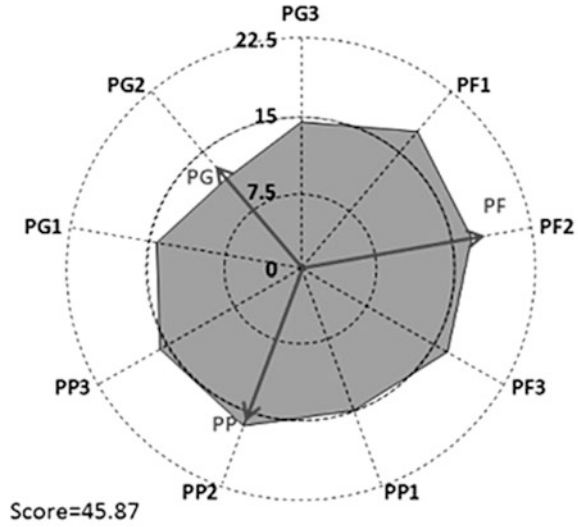
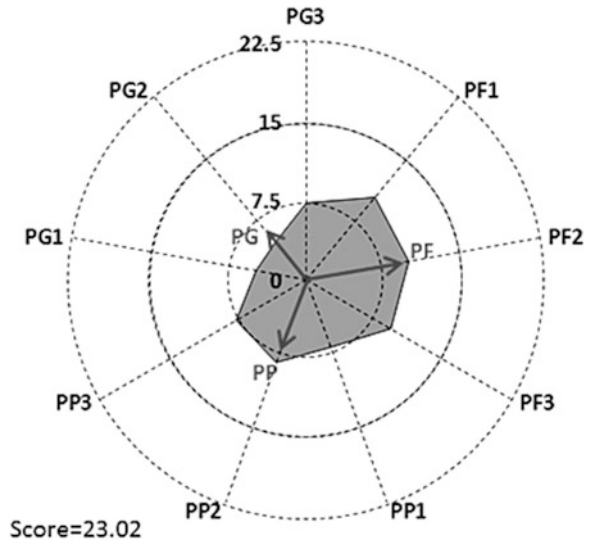


Fig. 12.8 Competence profiles of teachers from secondary vocational schools (Source: author’s own compilation)



4.2 Professional Identity, Organizational Identification and Achievement Motivation

Professional identity, organizational identification, and achievement motivation are dimensions relevant to how teachers relate themselves to their work. This relation constitutes the subjective dimension of the work process as opposed to the objective dimension, which is represented by the work tasks and the associated qualification requirements (Rauner et al. 2013, p. 31). While assessing the VET teachers’

professional competence, we also analysed the development levels of the professional identity, organizational identification, and achievement motivation of the VET teachers from the technician colleges in Guangzhou.

4.2.1 Professional Identity

Teachers' professional identity (occupational identity) refers to:

The identity of the concept and meaning of the occupation of teacher, gradually formed in the occupation of an individual teacher under a specific social environment and context. (Zhu 2012, p. 58)

The results showed that the average score for the professional identity of the teachers from technician colleges in Guangzhou was 13.31, similar to the overall average (13.40, covering samples from all regions and professionals in this investigation). However, the average score of the professional identity of the automobile maintenance teachers (13.03) was lower than the overall average, thus presenting a striking contrast with their competence levels, which were much higher than the average (Fig. 12.9).

4.2.2 Organizational Identification

Professional identity is related closely to organizational identification; in other words, the "cognition and feeling toward the served organization by organization members" (i.e. VET teachers) is "*a sense of belonging, loyalty, and pride for the organization*" (Zhu 2012, p. 58). The average score for the organizational identification of the teachers from technician colleges in Guangzhou was 13.86, slightly lower than the overall average (14.11). The average score for the organizational identification of the automobile maintenance teachers (13.61) was the lowest (Fig. 12.10).

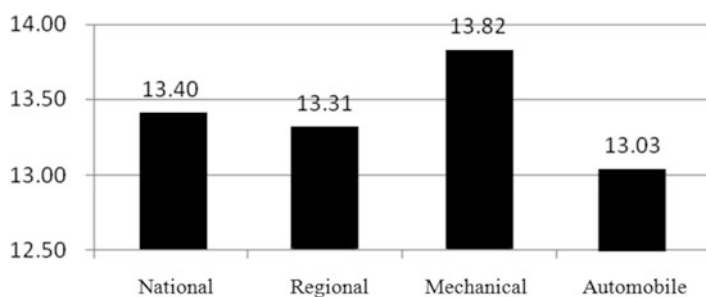


Fig. 12.9 Average distribution of professional identity of teachers in different sample groups (Source: author's own compilation)

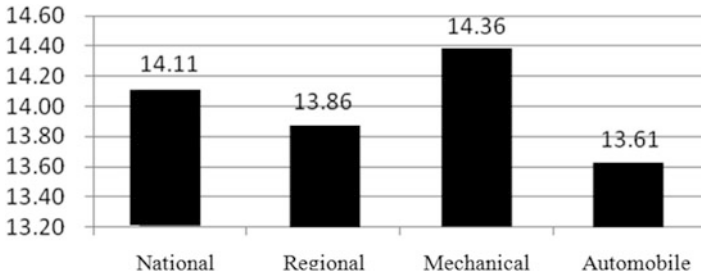


Fig. 12.10 Average distribution of organizational identification of teachers in different sample groups (Source: author’s own compilation)

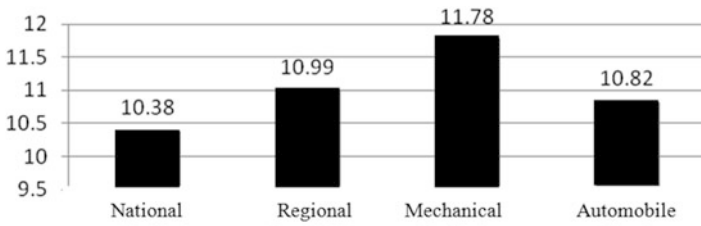


Fig. 12.11 Average distribution of achievement motivation of teachers in different sample groups (Source: author’s own compilation)

4.2.3 Achievement Motivation

The achievement motivation of the teachers was measured using the two dimensions (i.e. motive to approach achievement and motive to avoid failure) of the Achievement Motivation Scale developed by Gjesme and Nygard (1970). The average score for the achievement motivation of the teachers from technician colleges in Guangzhou was 10.99, which is higher than the overall average (10.38). The average score for the achievement motivation of automobile maintenance teachers (10.82) was higher than the average but lower than that of the mechanical manufacturing teachers (11.78) (Fig. 12.11).

Professional identity and organizational identification are generally considered closely related to professional competence; however, the professional competence and achievement motivation of the teachers from technician colleges in Guangzhou were higher than the overall average, whereas their professional identity and organizational identification were lower than the overall average. Except for those in Guangzhou, all of the vocational schools and colleges examined in the test are administrated by the education authority.¹ This result indicated that, although the professional competence levels and contributions of the teachers from the technician colleges were high (as indicated by measured student outcomes), they identi-

¹Technician colleges in China are administrated by the labour authority, the Ministry of Human Resources and Social Security.

fied with neither their profession nor their colleges (compared with their peers in colleges governed by the education authority). This situation may result from their relatively lower social status and wages.

5 Inspection of Test Quality

Statistical analysis determined that the overall quality of the professional competence test is high.

5.1 *Difficulty*

The test difficulty was within a reasonable range. Tasks with scoring rates higher than 0.4 and lower than 0.6 are considered to have moderate difficulty. The scoring rates for the two test tasks were between 0.4 and 0.5 for mechanical manufacturing (0.4816 and 0.4557) and automobile maintenance (0.4389 and 0.4147). According to the aforementioned standard, the difficulty of the two tasks was moderate, thus indicating high task quality.

The study determined how the 45 items matched the tested groups by analyzing the scoring rates of the two test tasks. The scoring rates of Item 36 for both test tasks were below 0.1, indicating that this item was not applicable to the tested sample group; the item was deleted. The scoring rates of Items 13, 18, 33, and 37 for both test tasks did not reach 0.3; these items were amended. After comparing the difficulty of the pretest and the official test, we determined that the scoring rates of Items 38 and 40 were higher for the automobile maintenance teachers than for the mechanical manufacturing teachers. These results indicated that the two items were more suitable for the mechanical manufacturing teachers, whereas Items 27 and 41 were more suitable for the automobile maintenance teachers. Adaptive amendments were made in the problem solution space for the four items.

5.2 *Discrimination*

To determine the discrimination of the 45 items in the whole tested sample, we used the full scale scores to determine the highest and lowest 27 % (90 teachers, respectively) of the 321 tested teachers, set them as the extreme group, and then conducted independent-sample t tests. The discrimination of items with critical ratio t values over 3.00 was considered high. On the basis of this standard, we adopted the extreme-group method to statistically analyse all of the sampled data. The results showed that the t values of all 45 items were over 3.00 ($p < 0.001$), indicating high discrimination.

Separately calculating the discrimination of each item of each test task for the whole samples of the two occupational fields (136 for mechanic manufacturing and 185 for automobile maintenance), we determined that only the t value of Item 36 for the mechanic manufacturing teachers was less than 3.00 ($p > 0.05$ or $0.001 \leq p \leq 0.05$). The t values of all of the other items were over 3.00 ($p < 0.001$), indicating that the discrimination of the test is excellent and that the test questions exhibit high quality.

Regarding the difficulty and discrimination indices for all of the official test and pretest data, we complied with the general assessment standards of education measurement. Because of the high difficulty and low discrimination of Item 36, it was deleted; Items 13 and 18 were amended because of their comparatively high difficulty and low discrimination. Regarding Items 27, 37, 38, 40, and 41, their levels of difficulty and discrimination were unstable for different occupational fields and samples; therefore, corresponding amendments were made to the solution spaces of the test tasks.

5.3 Reliability

Test reliability is considered acceptable when the reliability coefficient is over 0.5. If it reaches 0.9, the test reliability is very high (Qu 2009, pp. 283–284). The internal consistency reliability of the test examined here was 0.983, and the split-half reliability was 0.974. Both are over 0.90, indicating very high reliability.

5.4 Validity

5.4.1 Construct Validity

AMOS7.0 software was used to conduct confirmatory factor analysis, and SPSS Version 18.0 software was used to conduct relevant analysis for verifying the construct validity of the test concept of teachers' professional competence.

Basic and Alternative Models Referring to the KOMET teachers' professional competence model, the assessment model, and its operational definition of professional competence, we constructed a basic factor model: a first-order, nine-factor model consisting of nine indices and 45 items (Fig. 12.12).

If we regard the functional, processual, and shaping types of professional competence as competence dimensions, we obtain a second-order, three-factor model consisting of three dimensions and nine indices (Fig. 12.13), which can serve as an alternative model for confirming the results.

For the confirmatory factor analysis, we employed the χ^2 , RMR (root mean square residual), RMSEA (root mean square error of approximation), GFI

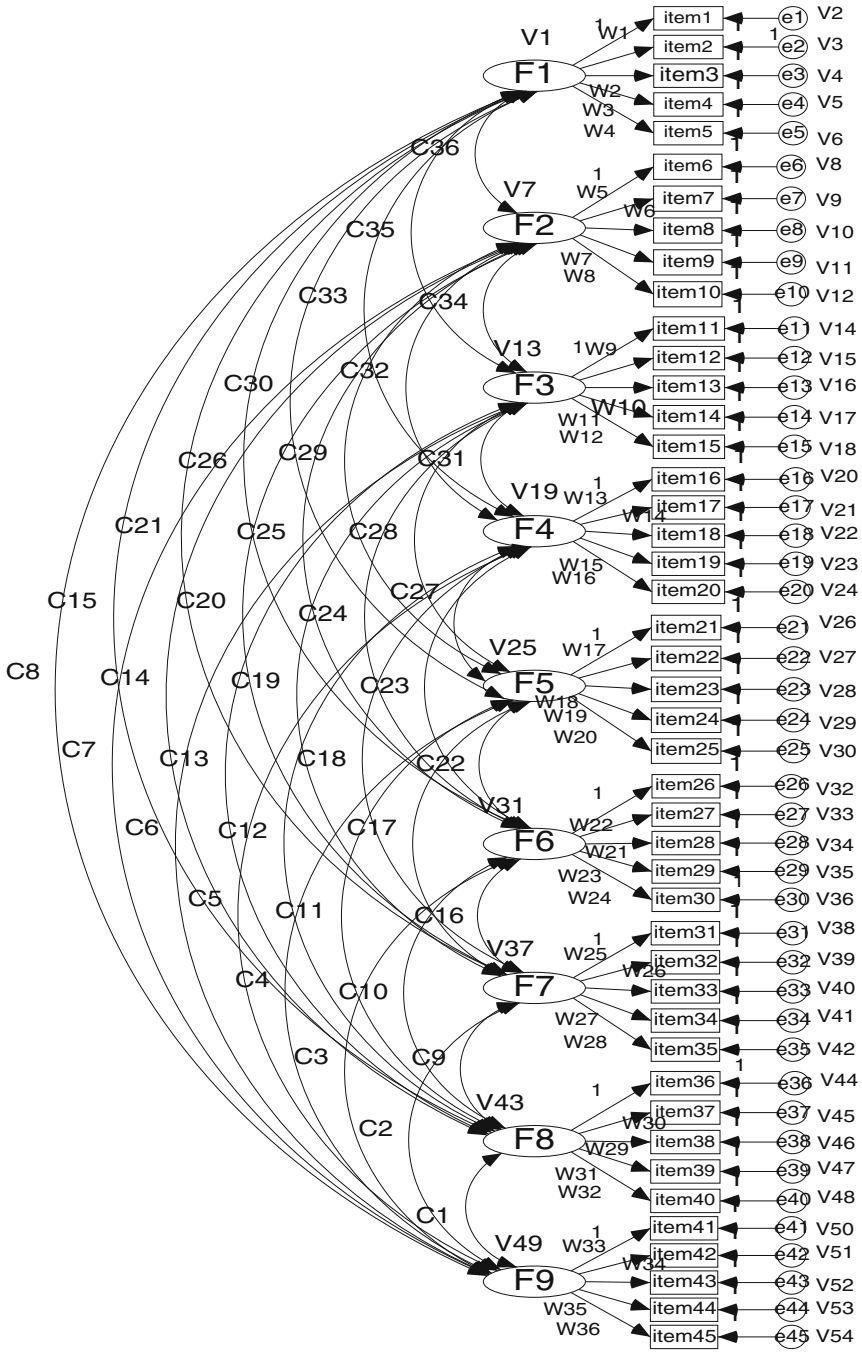


Fig. 12.12 Basic data model for VET teachers' professional competence (Source: author's own compilation). Notes: $F1-F9$ represent the 1st to the 9th competence indexes

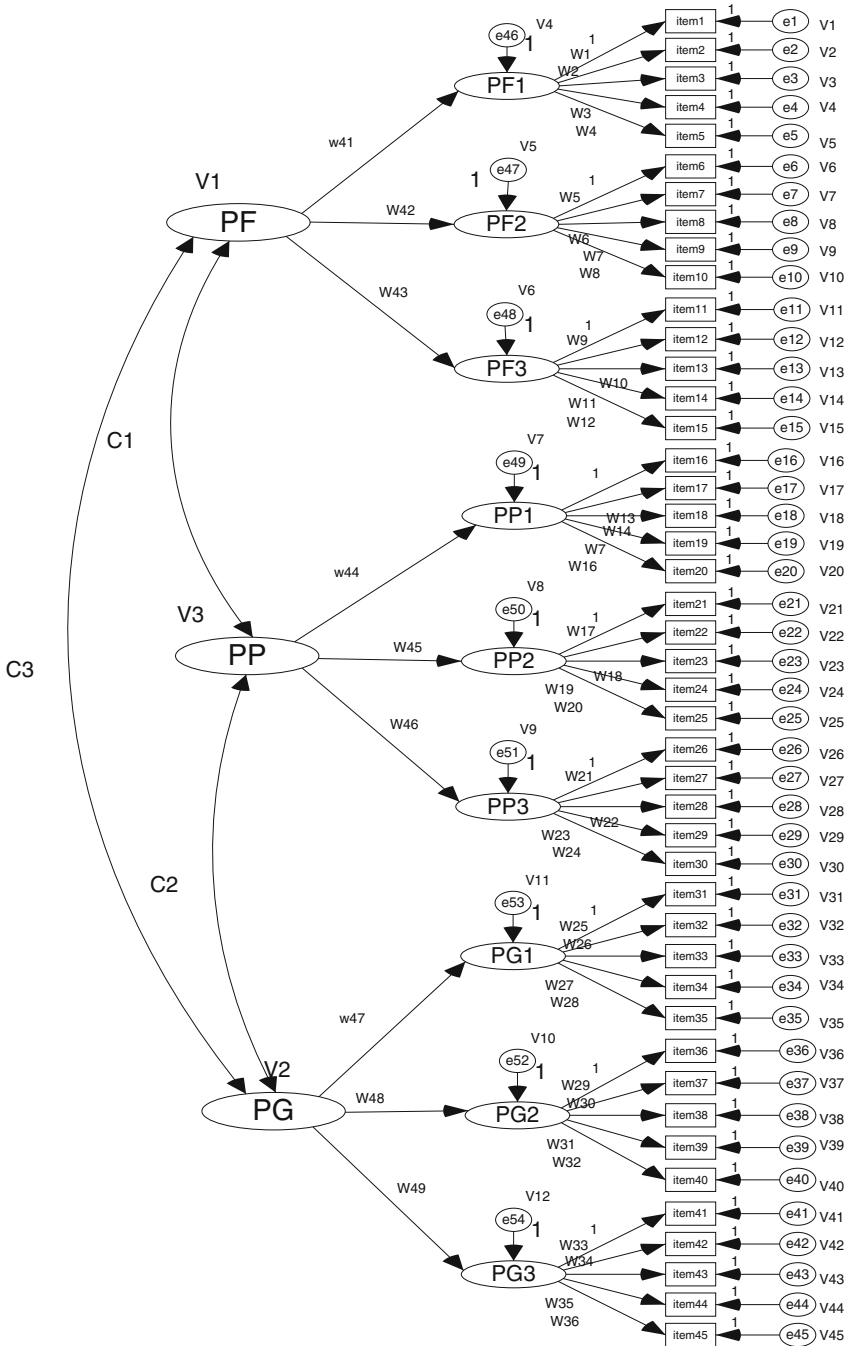


Fig. 12.13 Alternative data model for VET teachers' professional competence (Source: author's own compilation)

Table 12.2 First comparison of models

Type of model	χ^2	df	χ^2/df	RMSEA	RMR	GFI	AGFI	NFI	CFI	IFI
Basic model	3281.599	909	3.610	0.090	0.023	0.595	0.539	0.751	0.805	0.806
Alternative model	4610.502	943	4.889	0.110	0.040	0.544	0.499	0.650	0.699	0.700
The second-order model of the basic model	3664.136	937	3.910	0.095	0.030	0.574	0.529	0.722	0.776	0.777
The third-order model of the alternative model	4610.502	943	4.889	0.110	0.040	0.544	0.499	0.650	0.699	0.700

Source: author's own compilation

(goodness-of-fit index), AGFI (adjusted goodness-of-fit index), and some incremental fit indices such as NFI (normed fit index), CFI (comparative fit index), and IFI (incremental fit index), as well as a simple fitting index (χ^2/df) to evaluate the advantages and disadvantages of the models (Chen & Duan 2008). The goodness-of-fit results of the different models are shown in Table 12.2.

The data showed that most of the goodness-of-fit indices of the alternative model were below those of the basic model, indicating that the basic model had a better fit than did the alternative model. The basic model was nearer to the actual factor constructs of the test. The path correlation coefficients of all dimensions were over 0.80, indicating that other high-order factors might exist. On this basis, we constructed two high-order models (figures omitted because of limited space). After comparing the basic first-order model with the relevant second-order model and the alternative second-order model with the relevant third-order model on the basis of the aforementioned nine indices, we discovered that the nine goodness-of-fit indices of the new basic second-order model and the alternative third-order model were lower or equivalent to those of the original models. This observation indicated that the original models exhibited better goodness of fit and were simpler. Therefore, the basic model was the best of the four models.

Optimization of the Basic Model From a statistical perspective, a gap remained between the goodness-of-fit indices and the ideal indices, indicating that the definition of the model was probably still inadequate. After analysing the data by referring to the difficulty and discrimination levels, we deleted Item 36, which exhibited the highest difficulty and lowest discrimination of the items in the basic model, and the goodness-of-fit indices were nearer to the ideal values ($\chi^2/df = 3.643 < 5$; RMSEA = 0.091 < 0.10; RMR = 0.023 < 0.05; CFI = 0.810, IFI = 0.811, nearing 0.90). Deleting additional items with high difficulty, low discrimination, and unstable performance in different occupational fields such as Items 13, 18, 27, 33, 37, 38, and 41 improved the fit of the model ($\chi^2/df = 3.399 < 5$; RMSEA = 0.087 < 0.10; RMR = 0.015 < 0.05; CFI = 0.869, IFI = 0.870, NFI = 0.825, nearing 0.90). After preliminary modification using the modified index provided by AMOS7.0, the goodness of fit indices were satisfactory (Table 12.3).

Table 12.3 Second comparison of models

Type of Model	χ^2	Df	χ^2/df	RMSEA	RMR	GFI	AGFI	NFI	CFI	IFI
Basic model	3281.599	909	3.610	0.090	0.023	0.595	0.539	0.751	0.805	0.806
After deleting 1 index	3154.846	866	3.643	0.091	0.023	0.605	0.548	0.757	0.810	0.811
After deleting 8 indexes	2015.518	593	3.399	0.087	0.015	0.710	0.656	0.825	0.869	0.870
After modification	1664.680	588	2.831	0.076	0.014	0.751	0.703	0.855	0.901	0.901

Source: author’s own compilation

Table 12.4 Independent-sample *t* test on the scores of the teachers with or without awards in skill competitions

Item		Mean value	Standard deviation	<i>t</i> value	Degree of freedom	Significance (2- sided)
Score	Suppose the variance to be equal	38.2050	11.37835	-3.933	233	.000
	Suppose the variance to be unequal	44.0541	8.61334	-4.352	183.273	.000

Source: author’s own compilation

5.4.2 Empirical Validity

As the basis of and the displayed form of professional competence, skills are closely related to professional competence. In China, skill competitions are typically held to examine teachers’ professional competence. We attempted to verify the empirical validity (criterion validity) of the test by comparing the results of the tested teachers in skill competitions with their scores on the professional competence tests. We conducted an independent-sample *t* test by using scores from two sample groups: one was the group with awards in skill competitions, and the other without awards. The results showed (Table 12.4) that the mean values of the two samples were 38.21 and 44.05, respectively. The results of Levene’s test of variance homogeneity reached a significant level ($F = 7.902, p = 0.005 < 0.01$), indicating that there was a significant difference in the deviation of the two samples. From the *t* value (supposing that the variances were equal) and the significance ($t(183.273) = -4.352, p \leq 0.001$), we determined that the test result was extremely significant, indicating that there was a significant difference between the two sample groups.

There were also significant differences between the two groups of teachers regarding the types of professional competence (Table 12.5): functional ($t(188.392) = -4.341, p < 0.001$), processual ($t(180.040) = -4.419, p < 0.001$) and shaping ($t(175.612) = -3.911, p < 0.001$). These results indicate that the professional competence test can effectively discriminate talented teachers from ordinary teachers with excellent empirical validity.

Table 12.5 Independent *t* test on the scores of professional competence at three levels for the teachers with or without awards in skill competitions

Item	Mean value	Standard deviation	<i>t</i> value	Degree of freedom	Significance (2 sides)	
PF	Suppose the variance to be equal	14.7433	3.88015	-3.880	233	.000
	Suppose the variance to be unequal	16.6982	2.84448	-4.341	188.392	.000
PP	Suppose the variance to be equal	13.0890	3.97335	-4.022	233	.000
	Suppose the variance to be unequal	15.1869	3.06921	-4.419	180.040	.000
PG	Suppose the variance to be equal	10.3727	3.78394	-3.594	233	.000
	Suppose the variance to be unequal	12.1689	3.00513	-3.911	175.612	.000

Source: author's own compilation

Notes: *PF* for functional competence, *PP* for processual competence, *PG* for shaping competence

In summary, these results showed that the professional competence test exhibited high empirical validity, discriminating teachers with exceptional skills from those with average skills.

6 Summary and Discussion

The KOMET test of VET teachers' professional competence is high in quality. First, the test difficulty is within a reasonable range. According to general assessment standards (items with scoring rates between 0.4 and 0.6 are adequate), the test quality is high because the scoring rates of the two items (design of a project's teaching arrangement and design of a learning environment) were between 0.4 and 0.5 for the occupational fields of mechanical manufacturing (0.4815 and 0.4557) and automobile maintenance (0.4389 and 0.4147). Second, the test's discrimination is high. According to general assessment standards (items with a critical ratio *t* value over 3.00 are high), we conducted a statistical analysis of all of the sample data by using extreme-group comparisons. The results showed that the *t* values of the 45 items were over 3.00 ($p < 0.001$), indicating that all of the items exhibited high discrimination. Third, the test's reliability is high. According to general assessment standards (if the reliability coefficient reaches 0.50, the reliability is acceptable; if the reliability coefficient reaches 0.90, the reliability is very high), the test exhibits very high reliability, with an internal consistency reliability of 0.983 and a

split-half reliability of 0.974 (greater than 0.90). Fourth, the construct validity of the test meets the basic requirements for educational measurement. After Items 13, 18, 27, 33, 36, 37, 38, and 41 were deleted, the fit of the indices between the basic first-order, nine-factor model and the empirical data met the general assessment standards of educational statistics and measurement. In view of the specific connotation of VET teachers' professional competence, the measurement methods for peer assessment, and the guiding objectives, the construct validity of the test is acceptable. Finally, the empirical validity of the test is high. When we set teachers' awards in teaching skill competitions as a validity criterion, the teachers' professional competence tests could effectively discriminate teachers with exceptional skills from those with average skills, indicating that the test exhibits high empirical validity. Comparing the basic and alternative models of professional competence (Table 12.2) showed that level precedes dimension for the functional, processual, and shaping types of professional competence. The professional competence test' structure is clear which covers nine factors. However, items such as "*Students have opportunities to display and evaluate their learning results*" and "*It is helpful for feedback on relevant learning results*" are somewhat related, thus indicating that improvements to the test structure are required.

While improving the test quality, we also need to consider how general approaches apply to specific domains. For example, completing the design of a project's teaching arrangement task entails that the instructional objectives determine the learning content and approaches; therefore, all of the factors are interrelated. An essential philosophy of our assessment method is improving the competence development of teachers through competence assessment. Regarding teachers' competence development level in China, some of the test items are orientative, therefore they exhibit high difficulty and low discrimination in assessment. Thus the problem that the assessment has multiple objectives should be resolved.

The test proved that the questionnaire on influential factors for evaluating the professional competence development of VET teachers exhibits high internal consistency reliability and construct validity.

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Chapter 13

What Does It Mean to Be Vocational Teachers in China – Results from a Survey Among Chinese Vocational Teachers

Jun Li

Abstract Teachers' performance has a significant impact on the quality of education. Until now little empirical researches have been done concerning the vocational identity and professional development of vocational school teachers in China. Through an online survey of and in-depth interviews with vocational school teachers, this paper endeavours to offer a basic overview of what do Chinese vocational teachers think of their profession and what factors may influence their professional development. It finds out that the majority of Chinese vocational teachers do not choose their profession because of their intrinsic interests in teaching but for the sake of stability and long holidays; their career chances are to a certain degree constrained by institutional factors such as the professional title system which is regarded by many teachers to be outdated and unfair; they face various challenges and difficulties in their daily work found their income not proportional to their work loads.

1 Introduction

Vocational school teachers play a central role in vocational education and training (VET), their performance and behaviour has great impact on the quality of VET in general. With the rapid economic and social development in China, VET is gradually gaining importance, firstly due to the rising demands for well-trained skilled workers from industry, secondly because of government's input. After the heavy investment on VET related infrastructure and facilities, more attention has been paid on the vocational teachers. Teachers' performance can greatly affect the implementation of curriculum, the learning process and outcome of students, and therefore more generally, the quality of VET in general.

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Many factors significantly influence the performance and professional development of vocational teachers, which are demonstrated by a large number of empirical studies. Avalos conducted a review of publications in the journal “Teaching and Teacher Education” over ten years (2000–2010) on teacher and revealed that teachers’ professional learning (which includes for instance reflection processes, learning instruments and tools, beginning teacher learning), structured or semi-structured processes (such as school-university partnerships, collaborative networks), informal contexts (such as the workplace interactions), macro conditions (such as policy implementation, policy reform environments), school’s ethos and social environment (in form of operation of the administrative and organizational structures, and how these interact to facilitate or constrict teacher workplace learning), students learning as well as teacher changes in cognition, beliefs and practice all have impact on their professional developments (Avalos 2011).

Drawing on findings from a four-year longitudinal research project, Day and Kington (2008) identified associations between commitment and effectiveness, and found out that “*teacher identities are neither intrinsically stable nor intrinsically fragmented*”, and that a number of personal, professional and situated factors may affect that in teachers’ development process.

Some researchers have paid more attention on the macro condition of vocational identity of vocational teachers and their professional development. From a socio-cultural perspective on practice, identity and learning, Köpsén (2014) examined how Swedish vocational teachers describe vocational teacher identity in the context of new demands relative to VET in Sweden.

Scholars from China also have published relevant papers in international journals which are discussed below. Lee and his colleagues examined the professional identity of teachers based on teachers’ narrative and emotional responses to curriculum reforms introduced by the central government in mainland China and discussed factors that influenced and shaped teachers’ professional identity (Lee et al. 2013).

Various Chinese literatures have investigated the factors relevant to vocational teachers’ professional development, such as preparation in both pedagogic and subject content, experiences, self-perception, institutional settings, personal learning process, and school organisation (Du 2012; Chen 2009). Some Chinese scholars suggest that, among other factors, certain institutional settings (such as professional title system and qualification standard) and teachers’ vocational identity have significant influence on the professional development of vocational school teachers in the current circumstances (Hu et al. 2011; Xu 2007). However, little empirical researches have been done concerning these aspects.

The Chinese literature indicates that, although similar general factors such as self-perception, vocational identity, professional perspective and income level affect the performance of teachers in Chinese vocational schools, country-specific socio-economic and institutional conditions may influence the way these general factors above come into play in a concrete situation.

Based on the argument above this paper endeavours to explore the following questions:

- How do vocational schools select teacher applicants?
- Why did the vocational school teachers choose this profession?
- Which factors affect the career development of vocational school teacher?
- What do vocational teachers feel about their profession (satisfaction of income, main feelings of working)?

The answer of these questions can hopefully offer a basic overview of what do teachers think of their profession and what factors may influence their professional development, and this overview will lay a good foundation for focused investigations in the future.

In order to achieve this basic overview, a two-step investigation approach is applied. In the first step, an online survey with over 300 vocational teachers is carried out; base on the results of this survey, in-depth face-to-face interviews with four vocational teachers are conducted. Before introducing the findings of the survey and interviews, a brief introduction to VET, vocational teachers, and their professional title system is described, offering some background situation of the questions raised above.

2 VET and Vocational Teachers in China

Despite government's endeavour to improve the attractiveness and quality of vocational education through various measures, VET still has a relatively low social status compared to general education.

The Confucius instruction of "*He who uses his brain will govern; he who uses his strength will be governed*" is still widely accepted by Chinese of all social classes. Majority of the parents have the strong will to send their children to higher education if possible, believing that it is the only decent education pathway. Meanwhile vocational school graduates still have relatively poor future perspectives. Therefore for a very long period only the families with enormous financial difficulties and those whose children have no chance going to college will choose vocational education.

VET's situation in China has somehow improved since a few years due to the following two reasons.

Firstly, since middle 2000s, the central government has launched vocational school enrolment programme, which aims to balance the enrolment number of vocational and general education at higher secondary level with financial and administrative (but not market) approach. Concrete measures include: tuition fees were cancelled and subsidies were given to those enrolling in vocational schools; local education administration uses the number of enrolments in vocational schools as an evaluation criterion for education officials and school directors. These measures have very direct influence and boosted the number of enrolments at vocational

schools, as the official statistics indicate (MOE 2004, 2014). Secondly, after the continuous expansion of higher education for more than a decade, the graduates find it increasingly difficult to find a job after graduation, especially those who have not studied in the elite universities. Therefore, vocational education under this circumstance becomes a realistic and acceptable option for many students and their families.

Despite there are some general improvements in enrolment and a slight increase in the acceptance of vocational education, its social prestige and attractiveness still remains low (Shi and Tang 2009).

Thus one of the major challenges for Chinese VET remains largely unchanged: the vocational education track is still mainly chosen by those who perform poorly in academic subjects. Consequently, the vocational teachers have to deal with the relatively weaker academic basis and poorer learning abilities.

Vocational teachers in China also face some very country-specific challenges in comparison to their international counterparts; one of the most significant parts of the challenges faced by Chinese vocational teachers is the professional title system. According to the regulation of the Chinese central government, all officially employed teachers in higher-secondary vocational schools are granted certain professional titles, which can be basically categorized into three grades, namely primary title, middle title and senior title, which can further be categorized into nine sub-grades. According to the government, the purpose of this system is to improve the management of all the employees, and eventually “meet the actual conditions and the development requirements of vocational schools” (MoE 2007).

The system has existed for more than three decades, and ever since it was implemented, the professional title of a teacher is widely regarded as the major indicator for the career advancement; meanwhile, teachers’ income is closely related to their professional title. Therefore the professional title system has a very direct influence on the professional development and performance of Chinese vocational teachers (Chen 2009; Hu et al. 2011); thus the majority of the teachers are motivated to get progress within this professional title system.

Several reforms have been made to the system since its existence, however it is still regarded as out of date and problematic by many.

Since VET in China is still largely school-based, vocational schools have the responsibility to teach practical skills. Therefore in most schools two kinds of teachers exist: theoretical and practical teachers; in school reality these two group of teachers often have different educational and working backgrounds, therefore their career chances, especially when it comes to progression within the professional title system, differ greatly from each other and it has become source of evident unfairness (Zhang and Zhu 2014). Ever since the professional title system was implemented, the professional title of a teacher is widely regarded as the major indicator for the career advancement; meanwhile, teachers’ income is closely related to their professional title. Therefore the professional title system has a very direct influence on the professional development and performance of Chinese vocational teachers (Chen 2009; Hu et al. 2011).

As some Chinese scholars have clearly pointed out, this system has some problems, which may jeopardize the development of VET as a whole (Cao and Mu 2011). The scholars have identified the following as some of the major problems, including: the professional title system is too old and not updated to the latest developments in VET; the different characteristics of vocational schools in different industrial sectors are not taken into account in the professional title system; the peculiarities of vocational education in comparison to general education are not taken into consideration; professional title systems for practical teacher and part-time teachers are largely absent.

3 Research Methodology

In order to capture an overview of the entrance requirements, reasons of choosing teacher profession and influencing factors on career development of Chinese vocational teachers, a two-step investigation is carried out. Firstly an online questionnaire aiming at general picture is offered to a rather big group of teachers, secondly face-to-face interviews are carried out with a few teachers to have a more focused and in-depth understanding of the aspects mentioned.

Given the huge number of vocational school teachers in China in general, it is impossible to investigate the overall picture of the country in entire China. Vocational teachers have been chosen for interview mainly from three regions as the main research target for questionnaire: Shanghai and Jiangsu to represent east China, Guangdong, Guangxi and Yunnan to represent south China, and Hubei and Anhui to represent middle China. Online survey was carried out in which 320 vocational teachers (mainly from provinces above) have participated and delivered effective results.

On the basis of the survey results, in-depth interviews were carried out with four vocational teachers. Some of the prominent aspects from the survey are picked out as the themes of these interviews. The information of the teachers interviewed is presented in Table 13.1.

Table 13.1 Basic information of the teachers interviewed

Gender	Age	Years of working at vocational school	Subject of teaching
Male	31	9	Mechanical engineering
Female	34	12	Mathematics
Female	42	20	Marketing
Male	48	27	Logistics

Source: author's own compilation

4 Results and Analysis

In presenting the results, the answers to the questionnaire are firstly demonstrated, and then the basic analyses are given, mainly based on the results of the in-depth interviews. Therefore the results of the interviews are not simply introduced on its own; rather it also serves as the explanations of the questionnaire results.

4.1 Selection of Teacher Applicants

The table demonstrates that the most common forms used by the vocational schools while recruiting a teacher are interview plus pedagogic and teaching ability test, both of which took place in over half of the evaluation process of a new teacher. Theory and praxis test in subject matter is not so popular among the schools, but over 1/3 of the schools apply theory test and over 1/4 apply the praxis test correspondingly (Table 13.2).

One of the interviewed teacher mentioned that the evaluation process was not very difficult for the applicant because not that many people want to work at vocational schools (Table 13.3):

Once you met the basic requirements such as education degree, it is not very hard; they (vocational schools) want more male teachers, but men more often go work in the industry, because the salary is not very attractive for guys; but for women it is still good job because it's very stable.

The most important criteria in selecting a new teacher are, according to the results of questionnaire, education degree of the applicant, results of the interview and pedagogic ability tests; other notable factors include (chosen by more than 1/3 of the schools): (no) possession of teacher qualification, working experiences in relevant industry, theory and praxis test in subject matter.

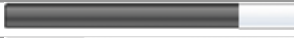
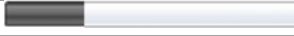







Education degree is among all factors the most mentioned one, because that according to China's Teachers' Law, teachers must have a certain education degree which is related to the ISCED level of the schools. For higher secondary vocational schools (ISCED-3), teachers must have at least bachelor degree (UNESCO Institute for Statistics 2014). This could lead to difficulties for schools when they want to

Table 13.2 Results to Question “When applying for your current job (as vocational teacher), did you participate in the following exams/evaluation? (Multiple choice)”

Options	Number	Percentage (%)
Theory test in subject matter	113	35.31
Praxis test in subject matter	88	27.5
Interview	228	71.25
Pedagogic and teaching ability test	173	54.06
Other forms of test	32	10
<i>Effective number of answers</i>	320	

Source: author's own compilation

Table 13.3 Results to Question “What are the most important criteria when choosing a new teacher in your school? (Multiple choice)”

Options	Number	Percentage (%)
Education degree	255	 79.69
College or university of graduation	88	 27.5
Whether the applicant possesses the teacher qualification	125	 39.06
Working experience in related industries	128	 40
Theory test in subject matter	149	 46.56
Praxis test in subject matter	129	 40.31
Interview	245	 76.56
Pedagogic and teaching ability test	229	 71.56
Other forms of test	16	 5
<i>Effective number of answers</i>	320	

Source: author’s own compilation

recruit people from the industry as praxis teachers, because for certain industrial sectors in China, for instance food and restaurant industry, even expert workers rarely hold a bachelor degree. One of the interviewees put it this way:

Education degree is a rigid requirement, if you don’t have it, then it’s very difficult; the education bureau checks it. This of course can cause trouble; our want to hire someone from the industry to work for us as full-time teachers, even if the salary issue is figured out, the education degree can still be a problem.


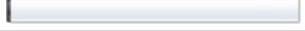
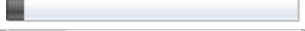

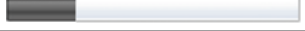
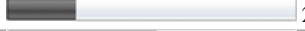

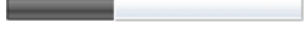
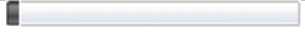
Interview and teaching test (in form of trial lecture) are attached great importance by schools because these are among the few methods schools can actually evaluate candidate teachers’ teaching and social competence in real life situation, as one of the interviewees mentioned:

Vocational schools generally do not have many opportunities to see the real performance of a teacher before they are hired, and the methods such as trial lecture and interview are very useful in judging these performance related competences.

One of the interviewees also participate in the selection process of new teachers at his own school, and he personally think that trial lecture and interview are very effective way to determine whether an applicant has potential to be a good teacher, he said:

In selecting candidates we use interview and trial lecture more because it’s efficient and effective. Most candidates nowadays already hold a rather high education degree, such as master and doctor; these people normally have very good academic abilities, which makes it not very difficult for them to handle the teaching in purely academic and professional sense. But real classroom teaching requires more, especially the communication and linguistic competences. Through interview and trial lecture we can easily see whether a person can deliver the knowledge in a logic and easy-to-understand way; we can tell whether they take into account the audience while they teach and whether they have affinity among the audience. And these things will influence the teaching in the future dramatically.

Table 13.4 Results to Question “*The reasons that you chose to be a teacher (Multiple choice)*”

Options	Number	Percentage (%)
Teacher profession is stable with a guarantee of income	160	 50
Teacher has high income	5	 1.56
Teacher has high social status	20	 6.25
I like teaching	65	 20.31
I like dealing with kids	77	 24.06
Teacher profession makes people learn	78	 24.38
Teacher has summer and winter vacation	167	 52.19
This was not what I had chosen intentionally, it was a choice by chance	118	 36.88
Other reasons	15	 4.69
<i>Effective number of answers</i>	320	

Source: author’s own compilation

4.2 Reasons of Choosing Teacher Profession

Teacher used to be a profession with very high social prestige; however vocational schools in contemporary China have difficulties finding highly qualified teachers. As the table 13.4 shows, over 1/3 of teachers answering the question chose this profession rather randomly; many teachers chose this profession largely because of its stability; many regard the summer and winter holiday as great benefit of being teachers. Only 6.25 % of the teachers think that teacher profession has a high social status. One of the interviewed teachers made it very explicit (Table 13.4):

Teacher is still a good profession in China, but teacher at vocational school is another thing; only poorly performed kids go to vocational school, so the teachers there are also regarded as second-class. It is really unfair.

Some choose teacher profession by chance because of bad economic situation, as one interviewee said:

I asked those colleagues with doctor title why they work here, they said that there were not many jobs available at the time when they searched for jobs; the economy was going down and they had nowhere else to go.

Less than 1/4 of teachers chose this teaching profession out of their intrinsic passion and interests in teaching and dealing with children, which is also confirmed by one of the interviewees:

Rarely anyone working in our school do this job really because they like teaching, most teachers choose this job because other options have failed.

Another interviewed teacher stated the positive side of being a teacher:

It certainly has good aspects. We have two long holidays, and those working in the companies do not have them; our job is secure, and we don’t really need to worry about being laid off.

4.3 Factors Affecting Career Advancement

The career advancement and progression plays a significant role in (de)motivating school teachers in China. As can be seen from the figure, among all the factors mentioned, publishing paper in academic journal affects the career advancement and title progression most of vocational teachers. In a way it reflects the degree of bureaucratization in Chinese education system. Since the career advancement and title progression strongly influence teachers' performance, the education administration tries to establish a system that appears to be most 'neutral' and 'fair', which means that in this advancement progress all the teachers are judged and evaluated according to an external and objective standards. Under this circumstance, the evaluation of teaching abilities and professional competence in the field can be very subjective and not neutral; whereas publishing paper in academic journals stands out as an optimal solution from the perspective of the administrators. However, from the viewpoint of the teachers it is a bad idea to associate the career advancement of teachers with so called objective standards, as one of the interviewees said (Table 13.5):

What does publishing academic journal have to do with my teaching? Nothing. It has nothing to do with our daily working reality at all.

Another interviewee mentioned the negative influence of this evaluation system on the motivation of teachers on accomplishing teaching work (Table 13.6):

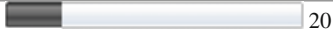
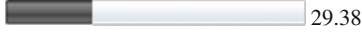



This requirement (on publishing paper) is simply absurd, it just makes us switch our attention to so called research, instead of improving actual teaching abilities. This is not a good thing for vocational teachers like us.

Table 13.5 Results to Question “Which of the following factors affect your career advancement? (Multiple choice)”

Options	Number	Percentage (%)
Length of working years as a teacher	129	40.31
Performance in daily life	153	47.81
Whether I'm in a management position	83	25.94
Publishing paper in academic journal	185	57.81
(various forms of) Examinations	61	19.06
Education degree	78	24.38
Carrying out other tasks, such as student competition	83	25.94
Other factors	34	10.63
<i>Effective number of answers</i>	320	

Source: author's own compilation

Table 13.6 Results to Question “Please choose among the following options describing career advancement the ones that you agree with. (Multiple choice)”

Options	Number	Percentage (%)
The current professional title system is able to reflect the characteristics of vocational education.	64	 20
The relevant provisions of career advancements can contribute to the motivation and professional development of teachers.	94	 29.38
Professional title can reflect actual teaching and pedagogical competence of teachers.	61	 19.06
Teacher’s income is closely related to their professional title and its progression.	175	 54.69
There are many problems with the current career advancement system of teachers.	123	 38.44
<i>Effective number of answers</i>	320	

Source: author’s own compilation

Table 13.6 shows evidently that the current professional title system is not very popular among the teachers: Only 20 % of the teachers think that it can reflect the characteristics of vocational education. As an interviewee mentioned:

Our professional title system mainly follows that of the general education system, with very adjustments made to adapt to the vocational education.

Less than 30 % of the teachers regard the current career advancement systems helpful in motivating the teachers. One of the interviewed teachers said:

Right now they use the same standards and requirements for all kinds of teachers at vocational schools, but it is very unfair for teachers teaching general subjects and praxis teachers, because it’s very difficult for them to obtain academic and research outcomes; and these visible outcomes are crucial for career advancement.

According to the result of questionnaire, less than 1/5 of the teachers think that the professional title actually reflects their teaching and pedagogic competencies, which is in accordance with the findings above. Although only about 38 % of the teachers explicitly agree with the statement “there are many problems with the current career advancement system of teachers”, their dissatisfaction against the career advancement system is obvious. One of the teachers interviewed even pointed out bad tendencies under such circumstance:

Since it is so hard for us to produce real academic journals, a small number of teachers are making somehow immoral methods to get around the system; in some schools patent is equivalent to academic paper, so some teachers will simply use money to buy those, and then apply for higher professional titles with those fake patents they bought; or they can find a small press and publish a textbook with their own money, and use that to get titles.

More than half of the teachers agree explicitly with the statement that professional titles affect their income. This could happen via different mechanism in various schools. One of the interviewed the teachers said that:

The teacher with higher professional titles has a better per-hour-salary for teaching; whereas another teacher said that ‘his school has different ‘coefficients’ for income bonus which is related to their professional titles’.

But when asked about to what degree this professional title system motivate the teachers, one of the teachers said:

It can be very different. The majority of young teachers are still enthusiastic about getting progress in their professional title, but the older teachers are generally not so interested in it anymore.

The reason for it is rooted in the institution itself and has something to do with different education background of the teachers too. As this teacher stated:

The system actually benefit those younger teachers who just graduate from universities and hold master or even doctor titles, because they are much more competitive compared to those older teachers with relatively lower education degree and less experiences in research.

4.4 Subjective Feelings About the Job

The table illustrates quite evidently that vocational teachers in China are not satisfied with their income. Almost 80 % of the teachers are not satisfied with salary, which is consistent with what the interviewed teachers said (Table 13.7):

While our tasks increase quickly, our salary remains largely the same; we don’t expect very high income, but a steady income raise that can catch up with the increase of CPI (consumer price index) should be reasonable, but that is not happening; my income has remained same for a few years.

Another teacher argued in the interview that generally teachers’ income level is not bad, but:

My income level is not in proportion with my work intensity and degree of hardness.

The last question of the questionnaire is an open question “*what is your deepest feeling since you work as a vocational teacher?*”

There are 320 effective answers to this question, as the questions above; and it’s difficult to present them all here, because they are all subjective feelings in forms of words and sentences. Here some major aspects of the answers are summarised as follows:

- Many vocational teachers have heavy workloads, it’s difficult to teach and manage the students;
- Majority of vocational teachers have limited career chances, as one of the answers put it, “*future is predetermined when you become a teacher*”;

Table 13.7 Results to Question “Are you satisfied with your income level?”

Options	Number	Percentage (%)
Very satisfied	1	0.31
Satisfied	69	21.56
Not very satisfied	192	60
Very dissatisfied	58	18.13
<i>Effective number of answers</i>	320	

Source: author’s own compilation

- A big part of vocational teachers’ work is to take care of the mess generated in the general schools, but teachers in vocational schools can only have lower income and social status compared to general school teachers;
- Vocational teachers are often tired, bearing lots of pressure in their daily work;
- Besides teaching, extra works are constantly increasing for vocational teachers, such as project work caused by national model school project and its inspection, but income is not raised accordingly;
- Some vocational teachers are also feeling meaningful and happy in their work, as one teacher says, “*bitter and happiness*”.

5 Summary and Perspective

The results of questionnaire and interviews put together can offer a basic picture on how vocational teachers choose their profession, how they are selected, how they get progression in the career developments and how they feel about their job.

Vocational teacher is not a very popular profession in nowadays China, due to the low social status of VET in general, graduates regard vocational teacher profession as a second choice after working in the industry. The selection of teachers in vocational schools is mainly based on the applicants’ education degree as well as their performance at the job interview and trial lecture. Practical skills, especially those related to industry, are emphasized on the theoretical level, but in the selection of teachers, difficult to take into account because rarely people from industry will join the teaching forces in China.

Most vocational teachers choose this profession not because of their intrinsic interests in teaching or its income, but rather out of random reasons. Many choose this profession because they have failed in their first option; many think that the security and long holidays make the teacher profession attractive.

The career chances of vocational teachers in China are not very promising, largely due to the institutional settings. The current professional title system applied in Chinese vocational schools is too academic oriented and does not take into account the characteristics of VET and teaching reality in schools. The system can be misleading for vocational teachers because it encourages publishing papers

instead of improving teaching and professional skills. Meanwhile many teachers think that it is out-of-date, unfair and demotivating.

The majority of the teachers are not satisfied with their income. Vocational teachers have heavy workloads and face various challenges, which are caused by factors such as students with poor academic competence and behaviour and project inspection.

Although this investigation has captured some interesting aspects of vocational teachers' work and professional developments, it has quite a few shortcomings, which can potentially be the themes of future research in relevant fields. Firstly, the research questions are too ambiguous and not clearly formulated, which leads to difficulties in data collection and causality analysis. Secondly, some important aspects affecting teachers' vocational identity and professional developments are not taken into account in this study, which pays too much attention to the country-specific features of teacher work and development.

These weaknesses can however mean the possibility for future investigations, with for instance statistically more sophisticated methods. Aspects that can be further explored or confirmed include but not limit to: measurement of vocational identity of Chinese vocational teachers with corresponding psychological instrument, investigation and comparison of subjective well-being of different professional groups in China, further investigation of the mechanism and effects of the professional title system in vocational schools relative to different kinds of teachers and industry sector.

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Chapter 14

Youth Employment and Technical and Vocational Education and Training (TVET) in China

Ni Tang and Weiping Shi

Abstract China has been recognised as “world plant” for many years; the energy-intensive, pollution-intensive, and low value-added industries have created many jobs in China and effectively solved the problem of unemployment. However, with the demographic dividend disappearing and labour costs increasing, private enterprises are being plagued by the shortages of skilled workers and meanwhile, millions of college graduates are unable to find employment. Chinese youth are suffering from the employment crisis. They are experiencing higher unemployment rate than adults, despite obtaining higher educational attainment, irregular employment of young migrant workers, and a higher rate for young people who are not in employment, education or training. These challenges are attributable to the structural crisis of the Chinese labour market: shortages of young people and shortages of young skilled workers, high pressures of employment resulting from the expansion of tertiary education, and the mismatch of migrant youth’s educational attainment and employers’ needs. The Chinese government has implemented vocational education and training policies to improve upon youth employment. These policies include curriculum reform to enhance employability of youth, the creation of a modern vocational education system, and skills-upgrading programmes for migrant youth, all of which have significantly improved the labour market outcomes for Chinese youth.

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1 The Youth Employment Crisis in China

1.1 Higher Unemployment Rate than Adults

Across all regions of the world, young people face higher unemployment rates than adults, often by a wide margin. Global unemployment rose by nearly four million in 2013, reaching 199.8 million, with the global unemployment rate remaining largely unchanged at 6 %. Close to 73.6 million youth worldwide were unemployed in 2014, an increase of 4.1 million since 2007 (ILO 2014). Youth comprise 40 % of the world's unemployed persons. Compared to the global adult unemployment rate of 4.5 %, the global youth unemployment rate rose to 12.6 % in 2013. In 2011, a youth's risk of being unemployed was three times higher than that of an adult. In all regions of the world, young people face higher levels of unemployment than adults do, with levels in some areas up to six times higher (ILO 2013a).

Similar situations are also occurring in China. The International Labour Organization (ILO) estimated China's rate of youth unemployment was 9.3 % in 2011, making it 2.8 times higher than the adult rate of 3.4 % (ILO 2013b). The 2012 Chinese Urban Unemployment Report analysed the distribution of the Chinese urban unemployment rate by age. This report demonstrated a U-shaped curve, with the higher rates of unemployment for age groups under 26 and over 46. In 2012, the urban unemployment rate for youth ages 21–25 was 9.6 %. The unemployment rate declined as age increased, with the lowest rate of 5.5 % for ages 26–40. The rate then rose again for people over age 40; for people ages 46–50, the unemployment rate was 9.3 %. Rural migrants are far less affected by unemployment than urban residents are. However, similar to their urban counterparts, rural migrant youths face a higher unemployment risk than adult migrants. The unemployment rate of rural migrant workers over age 26 was below 3 % in 2012; however, 4.7 % of young migrants under age 25 were unemployed (SWUFE 2012). These rates demonstrate that the youth in China are facing more severe employment challenges than most of the other age cohorts.

1.2 Higher Unemployment Rate for College Graduates

General trends demonstrate obtaining higher education is the best protection against unemployment; however, this is not the case for young labourers in China. Demonstrates the opposite trend, the 2012 Chinese Urban Unemployment Report found a positive correlation between the unemployment rate and educational attainment for youth ages 21–25. This indicates that as their level of educational attainment increased, so did the unemployment rate. The unemployment rate for youth with a primary school education and below was 4.2 % and youth with a secondary education had an unemployment rate of 8 %. The rates for these two groups are below the national youth average, which indicates a short supply of low-skilled

workers in China. The unemployment rate of young workers with postsecondary vocational college education increased to 11.3 % and was much higher (16.4 %) for youth with postsecondary university education (SWUFE 2012).

In addition to the higher unemployment rate for college and university graduates, tertiary level graduates are also experiencing a high unemployment rate. In 2013, colleges were expected to be less successful in procuring job placements for their graduates. By April 2013, the employment rate, or more precisely, the rate of 'signed contracts' for undergraduate students was reported to be 35 %, a 12 percentage point decrease from the year before. Postgraduates experienced an 11 % decrease in their employment rate from the previous year (26 %). The rate of graduation from tertiary vocational institutions was 32 %, down 13 % from 2012 (Schucher 2014). In 2013, there were 6.99 million college and university graduates. In 2015, the number of graduates reached a record high of 7.49 million, six times the number of graduates in 2001. The year 2015 was labelled as "*the toughest year for hunting a job*" (EOL 2015).

1.3 Irregular Employment of Young Migrant Workers

China is currently experiencing the most extensive internal migration to date. Rural migrant workers in China have become an important and integral part of the industrial workforce. The number of internal migrant workers reached almost 274 million in 2014, an increase of 5.01 million from the previous year (NBS 2015a). According to the National Bureau of Statistics (NBS) (2014), young migrant workers born after 1980 account for almost 50 % of total migrant workers and 65.6 % of total rural labourers. This population has been labelled the "new second generation" of migrants and the average worker is about 21 years old when they first enter the labour market.

In terms of employment, there are many young migrant workers in sectors of the secondary labour market that offer hardly any access to skilled jobs. According to the NBS (2014), most young migrant workers are found in the manufacturing, building, and service industries. In 2013, 39 % of young migrants worked in the manufacturing industry, 14.5 % worked in the building sector, 10.1 % worked in the wholesale and retail sector, and 10 % worked in neighbourhood service and other service industries.

Confined to the economic enclaves, young migrant workers face conditions of irregular employment, lack of promotion prospects, and low wages. With the advent of economic reforms that brought the closure of certain state enterprises, intensified working conditions, demanded higher quality, and integrated into the global economy, there has been a corresponding growth in the over-exploitation of the poorly qualified young migrant labour force. In some sectors, particularly the construction industry, migrant youth are paid annually, but the absence of a contract sometimes deprives them of any legal support in cases of non-payment. Likewise, they do not have guaranteed access to social security benefits. Other workers are paid on a

'piece rate' (i.e. measurable work completed). Common working conditions include a 14-h day (particularly in private enterprises), with no breaks for meals, no lodging for night workers, and no overtime pay. Unskilled migrant youth, being unrecognized and considered incapable of integrating, are viewed as a new "unnecessary surplus" to the needs of Chinese society, since they are unemployed, or at best employed only from time to time. Forced to bend to every demand, the migrant youth have to adapt him- or herself to risky, often filthy, working conditions. Unprotected by any statute, they face a complete lack of social security and a regular income, and endure disruptions, instability, and vulnerability in the labour market, all of which arise from that market's abnormal functioning.

1.4 High Rate for Young NEETs

Another sign of discouragement in the labour market is the growth in the number of young people who are Not in Employment, Education or Training (NEET). NEETs are particularly at risk in China's labour market. They are neither improving their future employability through investment in skills nor gaining experience through employment. A total of 357.7 million youth were considered NEETs in 2010; 16.7 million in developed countries and 341 million in developing countries, and these numbers are increasing (World Economic Forum (WEF) 2013). From 2008 to 2010, the NEET rate increased by 2.1 percentage points to reach 15.8 % as an average of Organization for Economic Co-operation and Development (OECD) countries. This means one in six young people were without a job, and were not in education or training (ILO 2013a).

Besides those who have lost their jobs and those who do not search for work, the term NEET also includes a group that is currently growing in China: college graduates. Many college graduates have difficulties finding a job in the labour market because of the huge surplus of college graduates. Furthermore, the surplus of new university and college graduates in the past five years has decreased the starting salaries that are being offered, which according to employment agencies are now approaching the pay levels of the far less educated migrant workers (Meng et al. 2012). However, college graduates still despise blue-collar jobs although these are far more abundant than white-collar ones. They often will not settle for anything less than their ideal jobs and would rather be supported by their parents than to seek unsatisfactory employment. This situation places them into the category of NEET. The rate for young NEETs has increased sharply, notably due to the mismatch between the type of jobs offered to new graduates and their expectations. The census data shows the rate for NEETs is considerably higher than for unemployment in China, especially for women and those in rural areas. In 2010, the NEET rate of youth was lower than that of the overall labour force, particularly since the rate among those aged 60 and over was rather high. Compared to adults, young people in Chinese urban areas abstain from the labour market less often, and those in rural areas abstain slightly more. While young males are less discouraged than

females, in urban areas, the male NEET rate is even lower than their unemployment rate (Schucher 2014).

2 Analysis of the Chinese Youth Labour Market

2.1 *Declining Youth and Shortages of Young Skilled Workers*

Demographic development is one of the most important variables of youth unemployment. China has experienced a very large increase in its labour force. Nearly eight million new entrants a year have been added to the labour market since the early 1990s. The growing youth population in China has mainly had a positive impact on the country's economic growth of "demographic dividend". Indeed, a large percentage of China's economic growth is attributable to the previous burgeoning of the country's labour force.

However, this dividend is disappearing. According to data from the NBS (2013), a decline in the working age population (15–59 years old) first appeared in 2012, a 3.45 million drop in contrast to the previous year. As of 2014, 915.83 million members of the population are of working age, which accounts for 67 % of the country's total population. This is a decrease of 3.71 million from the previous year (NBS 2015b). This is the third consecutive annual decline and it is continuing. According to Chinese census data, the number of Chinese youth peaked in 1990 as it did so relative to the size of the country's population of working age. Though the total number of youth would remain rather high for another 20 years, the youth as a percentage of the population of the working age has been steeply declining since 1990 from an initial height of over 25 %; it is estimated this trend will eventually plateau at around 15 % by 2025 (Schucher 2014).

It can be reasonably assumed that the declining relative size of the Chinese youth cohort will alleviate the employment pressure and reduce youth unemployment. Nevertheless, while the end of the demographic dividend has coincided with a shrinking labour market, the move to a less labour-intensive means of production will heighten the need for a more skilled labour force. Youth employees are not only the 'last in' but also the 'first out', since it is more costly for employers to lay off older workers. Young workers are less likely to have had company training, have fewer skills, and are therefore often vulnerable in their employment. China's demographic dividend is vanishing and the "Lewis turning point"¹ is emerging. Its future evolution will depend largely on the speed and success of China's efforts to rebalance and restructure its economy. China society is gradually aging society and

¹According to Lewis (1972) and Ranis and Fei (1961), Lewis turning point can be referred to as the period of time at which expansion of labor demand exceeds that of labor supply, it describes a point at which surplus rural labor reaches a financial zero and, as a result, wage rate of ordinary workers starts to rise.

experiencing a ‘labour shortages’ – particularly a short supply of young skilled workers.

2.2 Expansion of Tertiary Education and High Pressures of Employment

The high unemployment rate and poor employment rate of college and university graduates may be explained by the expansion of tertiary education in China. This wave of radical growth began in June 1999, when the central government decided to expand the higher education system in China. The Ministry of Education (MoE) was required to amend its annual recruitment plan for the fall of 1999 to accept more students. The rationales for this sudden move by the Chinese government included: (1) easing the immediate pressure of secondary school graduates on the labour market, (2) meeting the consistently high public demand for higher education in Chinese society, (3) the political will of the government to develop higher education under the pressure of global trends, especially the move of nearby developing countries in this direction, and most importantly, (4) accumulating human capital for future development (Wang and Liu 2011). Since the late 1990s, Chinese higher education has become more widely available to more people. An expansion of this magnitude has led to larger institutions, the emergence of new higher education institutions, and huge number of graduates. Since 2003, university and college graduates have increasingly flooded the labour market. In 2013, there were 6.99 million college and university graduates. In 2015, the number of graduates reached a record high of 7.49 million, six times the number of graduates in 2001 (EOL 2015).

This great expansion is also reflected by the increase in students’ enrolment in higher vocational education. Since the expansion of higher vocational education enrolment in China in 1999, by 2003 its scale had reached parity with that of higher education. As of 2012, vocational education had maintained this equal status with general education in terms of the number of students admitted and attending school at the higher education levels (Fig. 14.1), making it a popular and important force for the universalisation of higher education.

However, the country’s tertiary education sector has expanded far more rapidly than its economy has. China’s higher education system prior to the 1999 expansion was not prepared for the large-scale expansion, as it was basically characterized as “education for examinations”, and the reforms in the 1990s did not change this feature. The lack of diversity in curricula at different levels and in different divisions of higher education determined that graduates lacked the specialty and the flexibility to respond to market demands. Moreover, before the 1999 expansion, a national job market had not yet been established and people were still constrained by the residence registration system. The structure of China’s industries created a limited capacity in the job market for people with higher degrees and China’s job market

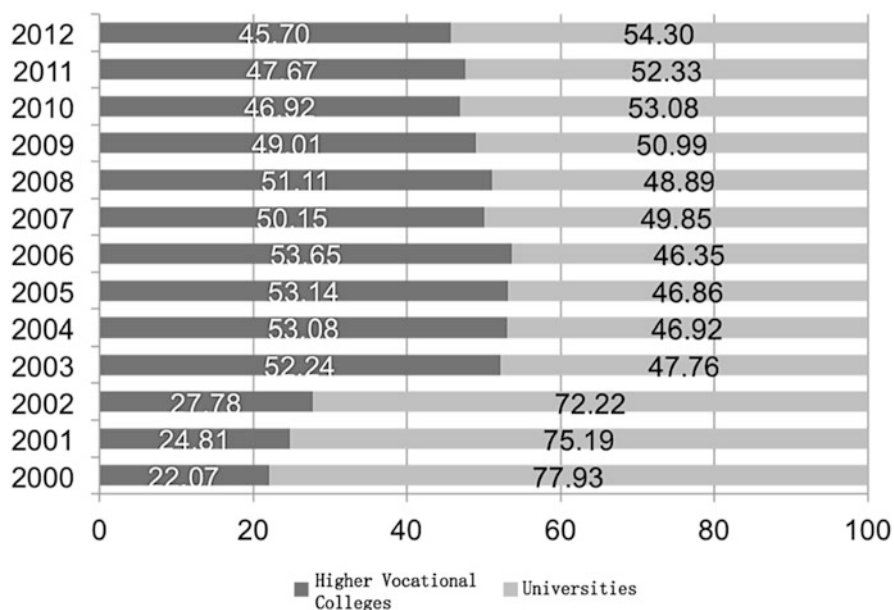


Fig. 14.1 The ratio of new student entrants of higher vocational colleges to that of Universities from 2000 to 2012 (Source: author's own compilation based on MoE 2012a)

would not be able to accommodate such a large number of university graduates (Bai 2006). The consequence of the great expansion of tertiary education in China, where the tertiary sector has been expanded beyond demand for it, will undoubtedly result in millions of graduates who will be unlikely to find employment.

2.3 Educational Mismatch of Migrant Youth

Since the policy of Reform and Opening-up in 1978 in China, millions of farmers have left the countryside to work and live in cities. Migrant workers have boosted the country's productivity, flowing between rural and urban areas as well as between industry and agriculture. They provide an abundant, low-cost workforce, vital to the development of the secondary and tertiary industries, satisfying the demand to speed up industrialization. Migrant workers fill vacant positions in labour-intensive industries. This ensures that cities, especially in eastern areas, can maintain competitiveness in the face of the fierce market competition. Although they have made a great contribution to China's modernization with their hard work, the poor education of the rural migrant workers and their lack of skills have seriously hindered their urban employment and poses huge challenges to China's social stability and sustainable development.

In 2011, China's per capita GDP reached 5,444 USD, indicating China had reached middle-income country levels. This situation resulted in many changes, especially for the migrant youth in the labour market (Qu 2013). China is experiencing an economy transition from labour-intensive to technology and knowledge intensive, indicating the need for improvement of labourer's human capital, and replacing quantity with quality of labour force to satisfy the need of industries upgrade (Cai 2010; Zhang et al. 2011). Human capital is highlighted as a "*crucial aspect in development*" (Wößmann 2003). However, the large group of migrant workers in China has low levels of human capital, and young migrants' educational attainments also lag far behind the demands of labour markets. According to the official survey on young migrant workers from the NBS (2011), most migrant workers (64.4 %) have a junior secondary school education, followed by 13.5 % who are senior secondary school graduates, 9 % who are specialised secondary school graduates, 6.4 % who are postsecondary vocational college graduates and above, 6.3 % who are primary school graduates and 0.4 % who are illiterate. Only 30.4 % of migrant workers have received vocational and technical training (NBS 2011). While young migrants have a higher level of educational attainment compared to the older generation of migrant workers, their overall human capital is still fairly low. According to the All China Federation of Trade Unions survey (ACFTU 2010), migrant workers' educational attainment and skill levels significantly lag behind the urban labour market demands. In 2009, labourers with senior secondary school educational attainment and above, accounted for 60.2 % of total urban labour market demand, whereas labourers with junior secondary educational attainment and below accounted for 39.8 % of the total demand. However, only 30 % of rural migrant youth can reach this requirement. Among them, labourers with secondary vocational educational attainment account for 56.6 % of total urban labour market demand, but only 20 % of rural migrant youth can reach this requirement (ACFTU 2010). Young migrants yearn for urban life and struggle to meet the requirements of modern industrial production, but the young migrant workers' educational mismatch severely impedes their stable employments in cities, and most of them can only work when young, being engaged in simple, physically demanding work.

3 TVET Policies for Youth Employment in China

3.1 Curriculum Reform to Enhance Employability of Youth

The surplus of college graduates and shortages of skilled workers create a large gap between supply and demand in the Chinese labour market. Course structure and content is not matched to the abilities and skills needed for certain occupations. Course content is out of date compared with the knowledge and skills used in the

real world. Course delivery methods tend to be traditional, which may be more suitable to train academic talents rather the practitioners with professional knowledge and job skills. Internships are not seriously enforced in most colleges, which result in poor work experience and job skills for most college graduates. Though their major is relevant to the job available, most employers are hesitant to hire such graduates as they do not possess the competencies required to perform the job.

Since 2004, the focus on vocational education development has gradually shifted to the curriculum; the goals of vocational education should be realised through its curriculum. Even more weight has been placed on practical training, which transcends the limitations of subject-based curricula. *The Appraisal for an Excellent Curriculum* initiated by the MoE and the strong desire for specific features in higher vocational education was the direct drive for this curriculum reform. This curriculum study focused on how to become free from the influence of the subject-based curriculum model in traditional universities and put more emphasis on the practical ability training for students (Shi and Xu 2009). The direct goal of this curriculum reform was to acquire specific features for higher vocational education in China, scholars in its favour tried to establish a kind of higher vocational college curriculum. Many higher vocational education colleges began offering practical approaches to the project-based curriculum. The project-based curriculum was created based on a systematic analysis of the working system; and therefore it was relatively comprehensive, complete, independent, and different from the traditional curriculum module based on skill units (Xu 2005). The project-base curriculum became the chosen direction of curriculum reform for higher vocational education. This reform also influenced the secondary vocational education system. Following the model of project-based curriculums, more and more secondary vocational schools were involved into this vigorous reform. Teachers in secondary vocational schools were required to attend a variety of vocational curriculum reform trainings and were asked to recreate curriculum materials such as textbooks to follow the project-based approach. Thus far, the textbooks in vocational schools, which are different from the knowledge-based textbooks in general secondary schools, have become the main achievement of vocational education curriculum reform.

Previous reform activities were limited to the stage of curriculum design. As the curriculum reform progressed, more and more attention has shifted to curriculum implementation. Starting points for the vocational education curriculum reform in China included how to stimulate students' interest in learning and how to make their studies interesting; and to make the learned knowledge and skills useful, not only to students' employment but also to the sustainable development of their careers (Shi 2006). One serious shortcoming of the present curriculum reform is the focus on the development of curriculum materials while neglecting the school-based implementation of curriculum reform, making teaching materials, such as textbooks, the final outcome of the reform. Now, the most important issue in vocational curriculum

reform is how to adapt the way of teaching and learning content. Vocational education curriculum reform must therefore be implemented where it really matters. Today's vocational education curriculum reform should focus on how to engage students to be interested in learning, enjoy learning, and to enhance their employability.

3.2 Modern Vocational Education System Construction

Since the turn of the twenty-first century, the Chinese government has held several national meetings on the status of vocational education, and has issued many relevant documents (e.g. *Decisions on Further Promoting the Reform and Development of the Vocational Education*; *Several Opinions on Further Strengthening the Vocational Education Work*; and the *Decision of the State Council on Exerting Great Efforts to Develop the Vocational Education*). These documents and other supporting documents have improved the macro-policy for vocational education. In addition, various local governments have also issued some specific policies and measures to promote the development of vocational education. This has greatly promoted the reform and development of vocational education to cater to labour market's needs.

Skills-based vocational education is receiving unprecedented attention from the central government as China seeks to ensure high rates of employment and seeks to improve the image of perceived 'cheap' made-in-China products. In June 2014, two of China's top leaders presided over a National Vocational Education Working Conference and around the same time, the State Council released a decision to accelerate the development of a modern vocational education system. Based on this decision, MoE and other national sectors jointly released a plan detailing the following: by 2020, China will establish a world-class modern vocational education system with Chinese characteristics; secondary vocational schools will have 23.5 million registered students; higher vocational colleges will have 14.8 million registered students; the focus is to nurture skills in modern agriculture, advanced manufacturing, modern service businesses, new strategic industries and social management, as well as ecological civilization; the general quality of vocational schools will be improved with better school facilities and better faculty and staff (MoE et al. 2014).

This modern vocational education system means to build a lifelong learning system by integrating education before and after employment and linking the secondary and postsecondary vocational education systems. Important aspects of building a lifelong vocational education system are: vertically, linking secondary and postsecondary vocational education and making four-year college accessible from higher vocational college even from secondary vocational school; and horizontally,

allowing general and vocational education to permeate each other and to have education and training intersect. The new plan of establishing a modern vocational education system means a transition from mono-level to multi-level development of vocational education. Since the great expansion of Chinese higher education in the 1990s, local educational departments and vocational colleges have appealed for higher-level development. Since 2000, local governments have authorization to approve the establishment of vocational colleges. From 2000 to 2003, local governments approved 584 vocational colleges. From 1998 to 2003, 114 excellent vocational colleges have been upgraded into universities. Since the late 1990s, vocational colleges upgrading into universities proved to be a craze in the ‘market’ of Chinese higher education. However, the newly established universities (which were upgraded from vocational colleges) were in a period of embarrassment and under pressure of the university graduates surplus and skilled workers shortages. In May 2014, the MoE proposed a reform to transform existing universities into ‘applied universities’. Among the 1200 higher education institutions offering degree programmes, 600 existing universities (that were upgraded from vocational colleges since 1999) will transform into a ‘vocational education track’. In the past, vocational education has been limited to the higher vocational college level and vocational education at the 4-year undergraduate or postgraduate level is not available in China. By establishing the modern vocational education system, *Professional Degree Programmes of Postgraduate* will be encouraged as the highest level of vocational education (Fig. 14.2), and a multi-level higher vocational education system including vocational colleges, applied universities, postgraduate programmes of professional degree will be established (Fig. 14.3). These multi-level vocational education programmes can be better linked to the labour market and provide additional and better employment routes for youth.

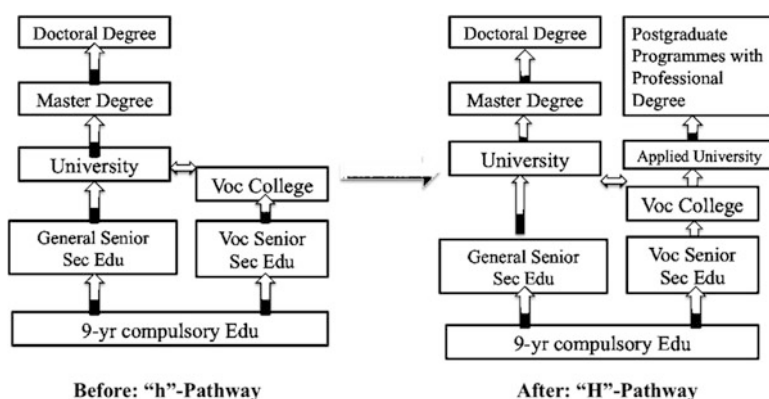


Fig. 14.2 Vocational education track development from mono-level to multi-level (Source: author's own compilation)

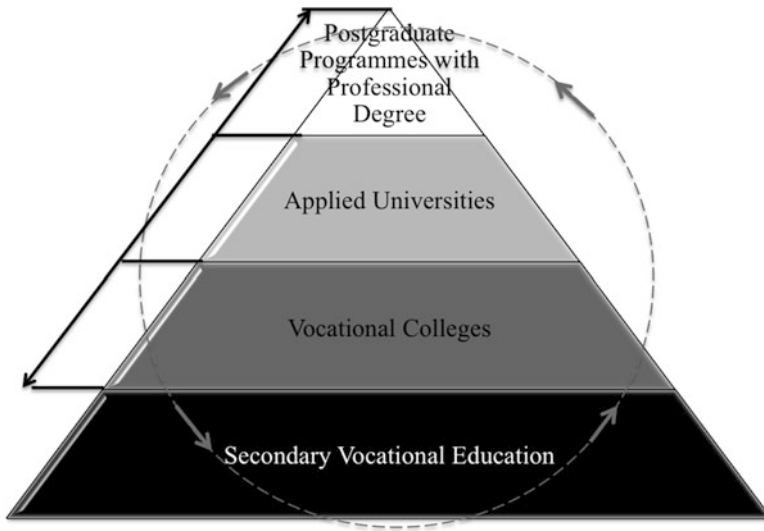


Fig. 14.3 Multi-level higher vocational education system (Source: author's own compilation)

3.3 Skills-Upgrading Programmes for Migrant Youth

Migrant youth's educational and skill mismatch has severely impacted their ability to procure stable and decent employment within urban areas. Therefore, providing vocational education and training for low-skilled workers (and especially for migrant youth), can help to equip them with relevant skills needed by the labour market. In recent years, the Chinese government has shown a real commitment to promoting decent work opportunities for young migrant workers. A set of TVET policies and programmes have been developed and implemented to support young migrant workers and to improve their employment opportunities and working conditions.

One policy aimed at providing vocational education for rural students after they complete the 9 years of compulsory education focuses on training them to be migrant workers in cities by providing them training experiences. In 2010, there were 13,900 secondary vocational schools nationally, including more than 3000 schools in rural areas. From 2001 to 2010, 67.23 million students enrolled in secondary vocational schools. 80 % of these students are from rural areas, which equates to around 53 million rural students in the 10 year time period. Graduates from the secondary vocational schools mainly engage in the second and tertiary industry, which has been the main source of technical talents. From 2006 to 2010, secondary vocational schools trained more than 20 million students to be rural migrant skilled workers in cities, with an average of four million students per year (MoE 2012b). Compared to the increase of nine million migrant workers per year nationally, in the future, rural migrant youth educational attainment and the proportion of skilled workers will be improved significantly at the source.

In addition to the formal education system, there are also non-formal educational programmes. In order to increase the income of rural households and to improve the overall quality of the industry labour force, the State Council devised *The National Plan of Training Rural Migrants in 2003–2010*, in September 2003. This plan provided hundreds of millions of migrant workers with introductory training in the areas of law, health, job seeking, and vocational skills. According to this plan, over the time period of 2003 to 2005, the state provided guiding training to ten million prospective rural migrant workers, provided special vocational skill training to five million of them, and provided on-the-job training to 50 million of rural migrant workers. From 2006 to 2010, the state provided guiding training to 50 million prospective rural migrant workers, and provided vocational skill training to 30 million; and provided on-the-job training to over 200 million rural migrant workers (State Council 2003). In 2004, China's central government launched the China Sunshine Project, a nation-wide training programme for rural surplus labourers under a strategic initiative to accelerate the country's urbanization process. The objective of the China Sunshine Project, was to provide government subsidized training to the increasing number of surplus workers in China's rural areas, assisting them in acquiring essential skills for urban jobs. The project was initiated by the ministries of Agriculture, Finance, Labour and Social Security, Science and Technology, Education and Construction. Training under the Sunshine Project is fully funded by government grants. The central government contributes the major proportion of the grant money and local governments are required to contribute some of the funds. The Sunshine Project effectively led the rural surplus labour force to non-agricultural industries and cities, and played a vital role in increasing the employment opportunities for rural young migrants and improving the overall quality of the industry labour force.

4 Conclusion

Youth unemployment is deemed to be a major breeding ground for economic discontent, social unrest, political extremism, and even terrorism. China's leadership currently appears to be extremely focused on unemployment, particularly youth unemployment. The past few years have seen China's best and most rapid development period for TVET. Chinese government has realised and unprecedentedly emphasized the role of TVET in solving the youth employment crisis. However, as under any new development scenario, the environment and conditions affecting TVET are constantly changing, and the factors involved are becoming increasingly complex. TVET's close relationship to youth employment and economic prosperity of the country indicates that China will continue to need to implement reforms to address the problems that remain.

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Chapter 15

On the Improvement of School-Enterprise Cooperation (SEC) in China

Zhen He, Liangcai Xie, and Yuzhu Li

Abstract School-enterprise cooperation is a basic institution of Chinese technical and vocational education and training (TVET). However, at present, School-Enterprise Cooperation (SEC) in China lacks sufficient motivation at various aspects, and numerous problems exist. This research applies questionnaire and interview methods to principals and vice principals of higher vocational colleges and human resource managers of enterprises in Beijing, Shenyang, Fushun, Jilin, Tieling, and so on to investigate the current state of school-enterprise cooperation. Problems identified include the provision of financing from only one source, enterprises' low level of involvement and commitment, reform lagging behind in qualification certification, and the low status of skilled workers. From the perspective of institutional complementarity theory, these problems reflect imperfect response systems. These TVET systems represent an important orientation of school-enterprise cooperation research beyond merely cooperation itself – in this regard, four proposals are presented in the basis of comparison between the situation in China and in other countries: A co-funding system, co-contribution to joint training by schools and enterprises, linking TVET with qualification certification, and improving the professional title system for skilled workers.

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1 Research Background and Research Question

1.1 Research Background

Since the establishment of the People's Republic of China, TVET has been emphasised. In 1958, China adopted the 'Part Work and Part Study' education model, asking students to work part time in a variety of contexts while studying in school, in order to help them link their studies with work needs (Geng 2011).

For political reasons, however, this model only lasted till around 1966. Afterward, beside the technical schools mostly operated by big national enterprises that configured teaching to address production needs, most Chinese vocational students studied at schools using subjective learning materials that were not revised in relation to social needs for a long time. As a result, China at present has millions of TVET graduates, but most of them have not smoothly made the transition to the workplace because their skill and knowledge do not meet the needs of real production.

In recent decades, China has shown outstanding economic achievements. However, with globalization deepening, further economic growth demands a shift from previous quantitatively oriented to qualitatively oriented development, a shift that requires numerous qualified and skilled workers. According to statistics released by the Chinese National Bureau of Statistics, in 2020 the total amount of highly skilled workers in demand will reach 1.4 million, that of moderately skilled labour 5.09 million, and that of entry level skilled labour 1.72 million.

This trend has led the Chinese government to realise that in contrast to the low skill level required by traditional subject-based vocational education TVET in China now has to link closely with real production and services, and foster highly skilled professionals to match. In 2002, the State Council put forward and promoted vigorously the training mode of 'Combining Work and Study' or 'SEC' in its 'Decision on Vigorously Developing Vocational Education'. Article 10 of this document commits the government closely to link education with enterprises, strengthen production practice and social practice, reform traditional training modes that were mainly conducted in schools and classrooms. Senior students in secondary vocational schools are now expected to do one year of internship in an enterprise or other workplace, and students of vocational colleges to engage in training of not less than six months. This leads to the further goal of establishing business institutions that can receive vocational school students for internship.

The 'Outline of National Medium and Long Term Education Reform and Development Plan (2010–2020)' was enacted in 2010. In the sixth chapter, Article 15 puts forward as a goal:

To establish and improve an education system of government domination, industry direction, and enterprise participation; to legislate laws and regulations to improve cooperative between school education and enterprises; and to promote institutionalization of SEC.

As the core of Chinese vocational education is SEC, which can more effectively cultivate skilled workers than before TVET. SEC lets students link their learning

closely to the demands of enterprises, instruct them in the latest and core technology, and students apply what they have learned into practice. However, SEC development in China did not go smoothly, facing difficulties at multiple levels, including school level, enterprise level, government level, association level and individual level. The number of apprentices has evidently not increased, and enterprises still have no enthusiasm to build practice facilities. Thus, the practice of SEC has no substantiated its initial supposed purpose.

1.2 Research Question

Nowadays, the Chinese state is acutely aware that vocational education institutions need to be improved. The government feels that the SEC has defects and itself is not enough for Chinese TVET healthy development. In 2013, the national Ministry of Education proposed research funds in the humanities and social science for the project ‘Production-Education Cooperation Institution Innovation’ (NO. 13YJA880025), entrusting researchers to survey and analyse the deep reasons behind the existence of obstacles to SEC and innovative ways of conducting SEC to avoid these obstacles.

As part of this project, the research question here is what institutional conditions lay behind the obstacles to SEC, and what possible innovations might exist for TVET institutions.

2 Hypothesis

Based on the researchers’ experience of research and practice, and on a review of the relevant literature, it was found that institutional complementarity theory could approximately answer the research problem. Applying this theory to Chinese SEC practice, research hypotheses can be made on matters like potential complementary of institutions of Chinese SEC.

2.1 Institutional Complementarity Theory

The institution is an important concept in economics. Douglas North, an American economist, has said that:

Institutions consist of a set of constraints on behaviour in the form of rules and regulations; a set of procedures to detect deviations from the rules and regulations; and finally, a set of moral, ethical behavioural norms which define the contours that constrain the way in which the rules and regulations are specified and enforcement is carried out. (Reinert 2007)

Masahiko Aoki, Japan's best-known researcher of institutional complementarity theory, claims there are complementary institutions within one domain, and that the existence of complementary institutions means dynamic institutional arrangements constitute a coherent whole and that any single institution will not be easily changed or designed in isolation; the holistic structure of institutions is complicated. In order to change a 'Pareto inferior' institutional arrangement, we need to change the system of complementarity and then trigger a chain reaction of other systems through complementary relationships (Aoki 2001). Some Western scholars also believe that national political and economic systems (including industrial relations, finance, vocational education and training, corporate governance, etc.) more or less function as a single integrated system. Peter A. Hall and Daniel Gingerich, Western political economists, have shown that matching systems exist by analysing data for various developed countries (Thelen 2010).

Therefore, for institutional arrangements in one domain, if adjacent areas have a set of institution arrangements compatible with it (if there is a state of complementarity between different institutions), this will improve the returns of all related institutions. The complementary institution is the institution that interacts with other institutions and complements them.

In education, institutional complementarity implies that making changes in one institution must also change others. Focusing on institutions in isolation would leave changed institutions in a state of imbalance because of lack of reform to complementary institutions, and it would be difficult for newly changed institutions to survive as a result. In China SEC is the core of TVET development. In recent years, various measures to promote such cooperation have been undertaken, but with no major achievements as yet. At bottom, this issue may be related to the fact that we have only paid attention to the development of SEC itself, while ignoring the construction of complementary institutions. To solve problems existing at multiple levels of SEC, we should form the institution structure matching SEC in broader domain.

2.2 Complementary Institutions in Chinese SEC

The construction of an institutional frame work is a complex question. After having analysed Vocational Education and Training (VET) systems in Germany, Switzerland, Austria, Denmark, and the Netherlands, Busemeyer and Trampusch (2011) formulated four factors contributing to skill formation: Who finances? Who provides training? Who regulates? And what is the relationship between VET and general education? These four factors influence and complement each other.

In China, the relationship between TVET and general education is being greatly emphasised and extensively reformed nowadays. In regard to SEC, four factors affect its practice closely, reflecting the schema of Busemeyer and Trampusch: financing mechanism (who provides the funds), joint training system (who provides training), regulatory system, including qualification certification system (who

regulates training and how), and skilled worker development system (who learns, and how to guarantee the rights and interests of learners). These four systems run almost independently in society; but from the view of SEC, they comprise a holistic SEC institution.

The research hypothesis of this paper is that these four complementary institutions also characterise Chinese SEC. If this hypothesis is right, deficit in any of the four could lead to obstacles for SEC; and to develop SEC, China will have to improve all four systems.

3 Method

The main research methods used here are survey and comparison.

3.1 Survey and Interview

The purpose of the survey questionnaires is to identify problems existing SEC in Chinese institutions. In all, 40 questionnaires were delivered to schools and 40 to companies.

The content of the questionnaires reflects the research question and hypothesis. The school questionnaire mainly covers the basic situation of the school, the way SEC is pursued, related practices of students, the evaluation of SEC, and so on. The content of the questionnaire for enterprises includes the basic situation of the enterprise, the situation regarding technical personnel (demand, treatment, qualifications), and participation in VET (including motivation, investment, apprenticeship situation, etc.). The response rate was 80 %, or 64 questionnaires (32 from schools and 32 from companies). In addition, we interviewed 32 school leaders and 42 human resource (HR) managers in companies.

The principle of sample selection is convenience: these were schools, companies, and leaders the researchers were familiar with. The fact that the survey was carried out under the imprimatur of the central government likely facilitated an increased response rate. However, as the sample was mostly distributed in the North and Northeast of China, for example in Beijing, Shenyang, Fushun, Jilin, Tieling, and similar places, it may theoretically not be representative of the whole of China.

There were 25 secondary vocational schools and seven vocational higher schools (vocational colleges) among the respondents. Table 15.1 shows the ratio of students to teachers: 1:18.2 in secondary schools and 1:30 in higher schools (colleges). The majors in these schools mainly lie in the domains of manufacturing, information technology, finance and trade, transportation, and tourism services. In all, 59.4 % of these schools are administrated by the education sector of government (public schools), with others affiliated to enterprises (private schools), etc.

Tables 15.2, 15.3 and 15.4 below give basic information on the companies.

Table 15.1 Distribution of students and teachers in sample schools

Number of students	Number of schools	Number of teachers	Number of schools
< 2,000	19	< 100	8
2001–3000	3	101–150	10
> 3,000	10	> 150	14

Source: author’s own compilation

Table 15.2 Distribution of ownership and industry of sample companies

Ownership	Number	Industry	Number
Private enterprise	19	Manufacturing	22
Foreign enterprise	4	Construction	2
State-owned enterprise	3	Transportation and warehousing	1
Other	6	Social services	2
		Other	5

Source: author’s own compilation

Table 15.3 Distribution of staff and skilled workers in sample companies

Numbers	Proportion of the whole (%)	Proportion of workers who are skilled workers (%)	Proportion of the whole (%)
< 200	34.40	< 30	12.90
200–400	25.00	30–50	6.50
400–1000	12.50	50–80	48.30
> 1000	28.10	> 80	32.30

Source: author’s own compilation

Table 15.4 Distribution of enterprise type in sample companies

Enterprise type	Proportion (%)
Labour-intensive	34.37
Technology-intensive	56.25
Capital-intensive	6.25
Knowledge-intensive	3.13

Source: author’s own compilation

Alongside the questionnaire survey, the researchers interviewed 74 relevant authorities, including 32 school leaders and 42 human resource managers within enterprises. Interview content aimed to obtain more specific messages beyond the questionnaire, in order to explore the actual perspectives regarding the specific conditions of schools and enterprises.

The privacy of participants was assured before the survey, and was protected during the survey. Numbers were used instead of private messages during data analysis.

3.2 International Comparison

The purpose of the international comparison is to highlight the lack of Chinese SEC institutions in comparison to nations with more successful TVET results, and to explore international TVET experiences for China to draw upon.

4 Results

This section presents the results of the survey and interviews and compares them with those of previous studies and for other countries.

4.1 Incomplete Financing System

4.1.1 Only One Main Funding Provider

The survey shows that only 5 % of companies and 1 % of schools supposed that enterprises would pay for SEC. In addition, only 15.6 % of companies were willing to provide funds for SEC, while 21.4 % of companies provided employee training funds for their own staff. Nearly half (48.4 %) of the companies do not have training departments or units.

At present, vocational education in China is mainly funded by the government, almost as the sole funds provider. Almost 90 % of funds for secondary vocational education come from national education funding and tuition; and from 2006 to 2009, national funds accounted for more than half of the cooperation funds specifically (Li 2012). More specific data is shown in Fig. 15.1. (Finance Division, the Ministry of Education & Society, Science, Technology and Cultural Industry Statistics Division, National Bureau of Statistics 2006, 2007, 2008, 2009, 2010, 2011, 2012).

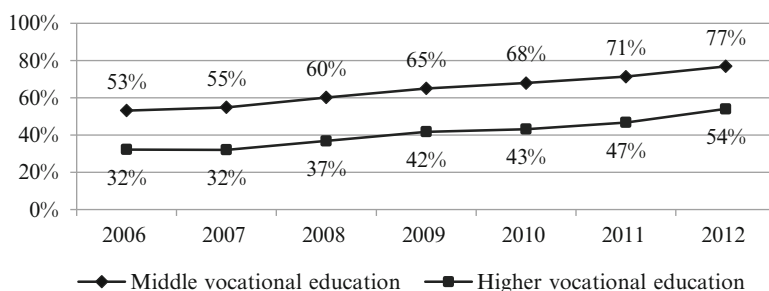


Fig. 15.1 Proportion of state education investment in Chinese secondary and higher vocational education (2006–2012) (Source: author's own compilation)

Vocational education is a national public welfare undertaking, and so government is obligated to provide funds for it. However, enterprises as direct beneficiaries of SEC should also bear responsibility to promote its development. The Chinese *Employment Promotion Act*, enacted by the National People's Congress in 2007, also stipulates in explicit terms that:

Companies should allocate the employee training expenses according to the specified act; for an enterprise failing to allocate or misappropriation of training funds, the labour administrative department shall ask the enterprise to correct and punish it according to the law. (People's Republic of China 2007)

However, due to poor implementation, Chinese enterprises are still not providing their share of financing for these programs.

4.1.2 Need for Co-funding System

SEC in TVET consumes a lot of time and effort, and requires a great deal of financial support. The current funding shortage and single-provider issue in China have become bottlenecks for Chinese SEC. The government should establish a financing system in which the government and enterprises are the main funding providers, while schools, society as a whole, and students also share the burden together. Particularly, the government should build mechanisms, by which associations and firms are involved in the financing for school-enterprise partnerships (He 2013).

The German case can provide some lessons in this regard. In Germany, investment in SEC is usually in the form of TVET funds, training funds, sectoral funds, etc. 'TVET funds' here are under the supervision of government, and all companies are mandated to pay into them. Meanwhile, only those firms fit to provide training can apply for training grants, and training funds are subject to control by industrial relations foundations, which ensure that those who have signed a trade agreement have to pay into the fund. Finally, sectoral funds are set aside for specific sectors, and the expense is shared by enterprises belonging to the sector (Geng 2011). To encourage firms to participate in the SEC financing system, China can learn from Germany's experience. For instance, part of the levies on enterprises should be directed to TVET funds. There should be certifications issued for those companies that actively promote school-firm cooperation. Firm-based training should be supervised by the government or associations. Additionally, only certified companies should get subsidies from government and support from TVET funds. According to the *Decision on Promoting TVET Reform and Development* released by the Chinese State Council in 2002, enterprises are required to spend at least 1.5 % of their payroll on employee training, and for those companies with better profitability, the maximum levy is 2.5 % (State Council of the People's Republic of China 2002). This decision should be enforced and the levy should contribute to TVET funds. Industry-level funds could also be piloted for well-developed industries.

4.2 *Absent Training Providers*

4.2.1 Chinese Enterprises Lack Involvement with SEC

Joint talent training is an important part of SEC, requiring schools and enterprises to act as co-providers of TVET. However, in China, not many enterprises are willing to participate in such cooperation, leaving schools to play a solo role. Through our survey, 65.5 % of companies are willing to offer internship positions, with 53.1 % willing to offer training venues, but only 28.1 % is willing to provide training. Therefore, we can see from these data that enterprises play only a secondary role in joint training.

Our survey shows also that companies are facing a risk of ‘poaching’ of talent by competitors, which can partly account for their low willingness to participate in TVET. Some enterprises participating in joint education not only have to bear the financial burden, but also face the risk of the qualified talents they help train being poached by their competitors. In the interviews, some managers said that:

We cooperate with schools to train qualified talents, but many students might not choose to work for us by the time they graduate; instead they choose to work for our competitors. So we can say we train employees for our rivals.

Indeed our survey has found a positive correlation between **per capita training** cost and turnover rate, which means the more training cost businesses, spend, the higher employee turnover rate get.

There is another reason behind enterprises’ lack of involvement with SEC: enterprises do not have much consciousness of the need to participate in joint training or improve the skills of their employees. Survey shows that facing skilled personnel needs, 53.13 % of companies choose to recruit from schools, 34.38 % of the companies choose to do social recruitment, and only 9.38 % of companies choose to enhance the skills of their own personnel. The *Vocational Education Law* enacted by the Chinese government in 1996 stipulates that companies must implement their vocational education obligations in accordance with relevant law. The enterprises that do not thus implement are ordered to make amendments. If they refuse to oblige, the government should levy a fine on them and use the fine in vocational education (The People’s Republic of China 1996). However, companies tend to recruit talent from schools without fulfilling their obligation to cultivate and train employees. This constitutes a poor implementation of cooperation.

4.2.2 To Enhance Joint Training

To enhance enterprises’ consciousness of the need to participate in joint training, their specific responsibility should first be precisely defined. As participants in SEC, enterprises have corresponding responsibilities and obligations as well as rights.

In this area, Germany again does better than China. The German federal government has promulgated a *Vocational Education and Training Act* (reformed in 2005),

various *Vocational Training Regulations*, *Examination Regulations* developed by associations respectively, and other laws and regulations clearly defining the rights and obligations of schools and enterprises. The federal *Vocational Education and Training Act* authorized the Federal Ministry of Economic Affairs and other departments in consultation with the Federal Ministry of Education and Research to promulgate nationally recognized educational vocation in the forms of acts and regulations (in 2007, for approximately 350 vocations). The corresponding vocational education regulations are unified regulations for specific implementation of vocational education and teaching activities (CEDEFOP 2011). Another example is that according to federal vocational education law an enterprise which has more than ten employees, if less than seven percent of employees constitute students receiving training, has to pay a training tax; conversely, enterprises meeting their responsibilities in this regard are compensated by government (Xie 2012).

Although the Chinese government promulgated a *Vocational Education Law* in 1996, it is too general, lacking flexibility as well as detail, only generally described what participants should do and not how to do it; there are also no clear supporting regulations setting out procedures, enumerating responsibilities and obligations, and rewarding and punishing enterprises who do or do not meet these requirements. These should be developed.

For example, to deal with the poaching problem, China could setup a reliable vocational education contract system fostering cooperation against poaching from participating enterprises. Developing a training contract can guarantee a relationship of commitment between enterprise and trainee, safeguard the enterprise's interests, and prevent them from exploiting trainees. Also, it can ensure that trainees work for the enterprise long enough to compensate for the cost of investment.

4.3 Reform of Vocational Qualification System Is Lagging Behind

4.3.1 Low Reliability of Vocational Qualification System

China's vocational qualification system for workers was initiated in the mid-1990s. In recent years, vocational colleges have become increasingly involved in this system and have integrated it with their diploma education, implementing the double-certificate education, which helps graduates obtain professional qualification certificates and degree certificates. However, we found a number of problems with this system: for existing vocational qualification systems, 59.4 % of school presidents believe that changes to assessment and examination are needed to address conditions in the corresponding industry, because many certificate examinations are not employment orientated, while 59.4 % of school presidents advocate that for some special industries, students should need to obtain vocational qualifications before employment, and 53.1 % of presidents believe that the right to issue vocational qualification certificates is limited too tightly by overseeing agencies, and that

industry associations and schools could issue these in tandem. In interview there is principal indicating that the double-certificate system should be integrated into one, because two systems are not conducive to the development of vocational education, in that even after getting the degree, some students must spend a lot of time and energy obtaining the certificate.

The survey results from enterprises show similar opinions: 75 % of employers believe that vocational qualification examinations value knowledge over practical skill, and 10 % of enterprises believe that the classification of vocational qualifications is not reasonable. During interviews, some managers proposed that the vocational qualification system and degree certificate system should merge together. They told us that some students could not find a job even with several vocational qualifications, reflecting that these qualifications have little function for manifesting one's vocational competencies. Some qualification certificates are too easy for students to obtain them. Qualification examinations are not framed reasonably. Therefore, the students holding vocational certificates cannot meet the expectations of enterprises. In their turn, enterprises do not recognise vocational certificates as important references during recruitment. Workers therefore cannot obtain job roles corresponding to their qualification certificates, and their salaries also do not conform to their corresponding ranks.

This situation has badly impacted students engaged in TVET, making them less optimistic about the future, less enthusiastic about their studies, and causing them to value qualifications less. This has negatively affected SEC.

4.3.2 Improving the Integration of Vocational Education and Qualification Certification

The integration of vocational education and qualification systems is an important part of SEC. Since being formally proposed in 1994, China's vocational qualification certificate system has been improved in theory and practice. Some scholars believe that there is an interaction between vocational education and vocational qualification (Ma and Xing 2008), in that a vocational qualification certificate system is beneficial to VET, can strengthen its ties with the job market, and can upgrade VET's social status. Vocational schools and qualification certification are both important forces in promoting employment. But how can we integrate them?

The first thing we should do is establish a bridge between vocational education and vocational qualification systems. A lot of examination content in vocational qualification does not meet the needs of enterprises. The level definition of skills certification is also not reasonable. To better address industry needs and trends, we should first build an advanced national vocational information system, such as the Occupational Information network (O*NET) in the United States, clearly demonstrating standards for professional ability. This can be done by upgrading the existing vocational qualification system and integrating it with VET.

Again referring to the American experience building O*NET, China should establish an employment information system. Work information can be managed

and released by industry associations, including the nature of the role, characteristics of and entry criteria for practitioners, and projected workforce demands.

Meanwhile, VET should adjust curricula structure and content, developing new courses to meet enterprises' workforce needs in terms of competencies. VET courses should be made consistent with the standards of vocational qualification in order to achieve long-term, stable, effective integration.

4.4 *Insufficient Value Placed on Development of Skilled Workers*

Most of the technical workers cannot develop continuously to become senior technician in China, and the poor work prospects affect youth enrolment in SEC.

4.4.1 **Low Status of Skilled Workers in Enterprises**

The survey found that skilled workers have low status in enterprises. For example, in setting salary, only 34.38 % of companies considered the skill level of workers; mostly they considered amount of production or working time (56.26 %).

In China, higher vocational schools graduates are becoming common in technical roles. As ordinary workers, their wages are comparatively low. Take the city of Changsha in Central China as an example. Table 15.5 shows general technical workers' wages in Changsha, per capita monthly salary is lower than per capita monthly salary for city workers or for state-owned enterprises workers (Changsha City Bureau of Statistics 2007, 2008, 2009, 2010, 2011, 2012).

The professional titles of China's skilled workers may be 'primary worker', 'intermediate worker', 'advanced worker', 'technician', and 'senior technician'. Unfortunately, senior technician, the highest rank, does not enjoy the same treatment and status as other professions, such as professor of teacher' title series. In addition, the working environment for technical workers is usually not good. In over

Table 15.5 General technical workers' per capita monthly salary and others', Changsha (2007–2012)

Year	General technical workers	City workers	Gap	State-owned enterprises workers	Gap
2007	1368.45	2330.67	1.70	2856.92	2.09
2008	1399.30	2652.92	1.90	3210.61	2.29
2009	1424.64	2907.42	2.04	3626.39	2.55
2010	1480.80	3194.83	2.16	3908.43	2.64
2011	1550.80	3708.08	2.39	4359.78	2.81
2012	1799.60	4242.00	2.36	5046.74	2.80

Source: author's own compilation

30 years of reform and opening up in China, there has not been one official document addressing the treatment of technicians and senior technicians. What's more, the social status of worker is different from that of officer, and generally seen as lower. The fact that technical workers are inferior to officers in social status and wages is the deep-rooted reason behind the desperate lack of skilled workers in China, and a barrier to the development of SEC.

4.4.2 Need for a System Promoting Skilled Workers' Continual Development

One reason for the low status of skilled workers is that their skills date quickly, and lifelong development is difficult to achieve. Their VET suffer from a lack of coherence and systematicity. One important part of solving this problem will be accreditation of prior learning (APL), in which, after both formal and informal education, ones' learning results will be accredited and listed in one's development portfolio, notifying interested people of one's new level of knowledge and competency, whether past learning is formal education, adult education, vocational training, or self-study. In one's following study, these former learning results will be recognised. Students will not have to spend time learning material more than once. The Chinese design of APL should completely record the past learning results of students, regardless of whether past learning occurred as formal education, adult education, vocational training, or self-study. As to the manner of accrediting, it is necessary to conduct assessments after each type of learning, making it convenient for students to obtain the generally acknowledged learning results. Portfolios should be electronic and should record students' assessment results, learning hours, and other learning results; this recognition should elevate their learning initiative and enthusiasm. Some studies show that in the United Kingdom and the United States, adults after implementation of APL become more confident and willing to take more responsibility for their future development, and their attitude to education and training also changes. "The proportion with positive attitude significantly increased" (Xu and Shi 2000). Besides the establishment of individual development portfolios, it is also a good solution to establish a credit bank converting one's past learning results (courses, certificates, and so on) into a corresponding convertible or generally recognised credit.

Another solution to promote skilled workers' continual development is to establish a personnel information release system. China has no such system now, but Europass is a good example. Europass includes five documents: Curriculum Vitae, Europass Mobility, Language Passport, Certificate Supplement, and Diploma Supplement. Among them, Curriculum Vitae is an individual document presenting one's skills and qualifications effectively and clearly; and the Language Passport is a self-assessment tool for language skills and qualifications. Europeans can create Curriculum Vitae (CV) and Language Passport online using tutorials or download a template, examples, and instructions. Europass enhanced the transparency of Europeans' personal and professional information, helping citizens communicate

their skills and qualifications effectively when looking for a job or training, helping employers understand the skills and qualifications of the workforce, and helping education and training authorities define and communicate the content of curricula (CEDEFOP 2015).

It is necessary too for China to establish a workforce database, with a real-name registration system, to facilitate workforce information release. Individuals should update and release the latest information about their academic achievements, skills and occupation qualifications, and employment intention, in accordance with particular rules. This can help enterprises make better and more informed choices, and can also help vocational graduates find a wider range of jobs.

In summary, in the process of the development of school-enterprise cooperation in China, some systems are inefficient, some have not kept up with the times, and some are completely absent. Each of these issues impacts SEC implementation to some extent. From the international perspective, it can be seen that there is great possibility for improvement of SEC institutions in China. Chinese SEC should not overlook anyone of these possibilities.

5 Discussions

5.1 Substantiation of the Research Hypothesis

From the research results, we can see that there are four important systems affecting Chinese SEC: funding, joint training, qualification certification, and skilled worker development. And in all aspects, SEC is facing obstacles. To develop just one of the four systems is not enough for improvement of SEC; China must improve all four systems in tandem.

5.2 Answering the Research Question

What institutional reasons explain the obstacles to SEC? As noted above, the funding system, joint training system, qualification certification system, and skilled worker development system are interacting. Shortage of funds could lead enterprises to become less enthusiastic about participation, and if schools cannot pay for SEC it will of course affect joint training. Lack of joint training will lead SEC to a lack of resources including funds, affecting the improvement of workers' skills and qualifications and thus perpetuating their low status. Flaws in qualification certification and skilled worker development may lead youth men to be less willing to become skilled workers, making SEC more difficult to recruit students into and thus further reducing the efficiency of joint training and the use of funds evidently.

And what possible ways of innovating are there for SEC institutions? Referencing international experience of SEC, we have found some possible pathways for Chinese SEC institution improvement. They are summarised below.

5.3 Proposals for the Chinese Government

Better institutional complementation for SEC could solve problems existing in SEC practice across all four core systems. The arrangement of institutions includes Financing System, Joint Training System, Integration of Vocational Education and Qualification Certification System, and Skilled Workers Development System.

5.3.1 Co-financing System

Financing for SEC should involve all stakeholders: individuals, enterprises, schools, and government. At present, the key to improving SEC is to set up a financing system that ensures that enterprises provide funds for improving the skills of apprentices and staff.

5.3.2 Increasing Enterprise Contributing to the Joint Training Program

One priority should be the amendment of the *Vocational Education Law* to make it more flexible, and the implementation of new supporting laws, rules, or regulations setting out clear responsibilities and obligations of enterprises involved in SEC and rewarding and punishing them and schools according to their behaviour. To deal with the poaching problem, a reliable vocational education contract system should be set up between enterprises and trainees.

5.3.3 Integrating Vocational Education with Qualification System

Authorities should integrate vocational education with the qualification system in order to strengthen TVET ties with the workplace, upgrade VET's social status, and promote employment of TVET graduates. As a basis, we should first build an advanced national vocational information system on the model of the US O*NET, to manage and release vocational information including duties of roles, characteristics and entry criteria of practitioners, and workforce demand for various roles among enterprises.

5.3.4 Skilled Worker Development System

Chinese skilled workers have low status in enterprises and society. This is a deep-rooted reason behind the desperate lack of skilled workers in China, and a barrier to the development of SEC. Possible solutions are found in APL and the implementation of a personnel information release system.

In addition, one particular phenomenon affects Chinese skilled workers' development. It is the professional title system, a system unique to China. The 'professional title' here refers to the technical competency level of professional and technical personnel for a given professional post, showing what kind of job they can be engaged in and also giving an achievement grade and level (with title) for the practitioners. For example, professional titles series of economy includes three grades of assistant economist, economist, and senior economist. The economist title covers some qualification certificate such as business executive, human resources professional, real estate valuer, enterprise legal adviser, etc. The Chinese government has made it clear that it is the right of the employer to assign such titles to personnel, especially in enterprises. But there are numerous jobs that have no clear professional title promotion channel, which negatively impacts the skills development of workers in these jobs. Therefore, it is necessary to establish improved title promotion channels for people in all professional job groups, making title promotion feasible and smooth for all skilled workers. In such a system, each job would be included in a sequence, enabling practitioners to have a sense of their position and promotion probability, which should be consistent from title progression to title progression.

Taking hotel management majors as an example, if students realise they can only engage as hotel staff after graduation, with a very small chance of promotion, their learning motivation would certainly not be high enough. So it is necessary to show them a clear promotion path to managerial jobs, including needed steps and general time to achievement of senior professional manager title. Once students found that they faced a 'thoroughfare' after graduation, and with effort they could reach a high title level in their profession with good wages and prestige, rather than being stuck in front-line staff work, their learning motivation for SEC will certainly increase.

6 Conclusion and Limitations

Through this survey, it is found that evident institutional problems in TVET SEC in China include shortage of funding, reliance upon only a single financing provider, lagging reform in qualification certification systems, and the low status of skilled workers.

Based on an international comparison, some possible suggestions for addressing these issues were proposed: a co-funding system, schools, and enterprises contributing to joint training, linking TVET with qualification certification systems, and improving the professional title and promotion system for skilled workers.

According to institutional complementation theory, the development of SEC depends on the establishment and improvement of all relevant complementary systems. In academic research and SEC practice, we must rely on holistic change of SEC institutional structure, not just pay attention to one system at a time.

However, because the survey was mostly distributed in the North and Northeast of China, the study results are not necessarily representative of the whole country. More research in other parts of China is needed to provide rich data and refine the research findings.

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Part IV
United States of America (USA)

Chapter 16

Why Firms Do and Don't Offer Apprenticeships

Robert I. Lerman

Abstract The workforce strategy of firms is increasingly important for competitiveness and for producing at high quality and low costs. Firms must decide on the mix of skills and wages for current and future operations and on whether to train skilled workers or hire them from the open labour market. While traditional human capital theory states that firms will not finance training for general skills, modifications of the theory show training for general skills can be profitable. The modifications are compelling, since employer training for occupational skills varies widely across countries. Employers in the U.S. and France provide little occupational training while the extent of employer occupational training in Germany and Switzerland is enough to reach 55–70 % of a youth cohort. This chapter examines the factors influencing firm choices about providing one type of general training-apprenticeships. Offers of apprenticeships are common in countries where knowledge about apprenticeships is widespread, occupational standards are well developed, and the government finances related, off-the-job training. One reason is that firms in these countries recoup most or all of their investments during the apprenticeship itself, mainly because of the productive contributions to output by the apprentices. But in other contexts, such as the U.S., firms are far less likely to offer apprenticeships. South Carolina's Apprenticeship Carolina demonstrates how marketing to individual firms and simplifying the process of hiring apprentices can lead large numbers of employers to provide occupational skills training.

1 Introduction

Developing, producing, and selling goods and services in today's competitive world require high quality and low production costs. Success is far from assured, as revealed by the ups and downs firms experience in their sales and profits and by frequent bankruptcies. In general, companies rarely place workforce issues at the

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top of their agenda. They worry about such questions as: where are sales coming from? Will we produce enough goods and services or too many? What are the legal and regulatory hurdles we must overcome? Companies certainly consider how many people to hire at various salaries and employee benefits and for various positions. In doing so, employers typically hire from the general labour market those workers who fit their mix of occupational demands.

The economic theory underlying the demand for labour begins with this passive role for employers in competitive labour markets. Like perfect competitors in the product market who have no control over the market price, employers are 'wage takers' in the sense that they cannot pay less than the going wage for a specific skill. The human capital revolution pioneered by Jacob Mincer and Gary Becker extended the theory to incorporate investments in skill development by firms and workers. According to the theory (Becker 1964), the key distinction is between firm-specific training, which enhances productivity but only for the firm providing the training, and general training, which raises productivity of workers in both the training firm and other firms. Becker and others argued that firms will only pay for firm-specific training. Financing general training will not be cost-effective because of the risk the firm will not accrue sufficient benefits to offset training costs before other firms hire away the trained workers. Since the added productivity makes workers more valuable both inside and outside the firm, firms financing the training will be unable to recoup their investment by paying the newly trained worker a wage less than his or her newly enhanced level of productivity. Competitors will hire the worker away from the company providing training or bid up the trained worker's wage to the new productivity level. Employers may finance 'general' training costs but only by paying lower wages.

Since the theory applies to all profit-seeking firms and income-maximizing workers, one would expect to find similar patterns of firm-based training investments across countries. But, in fact, the patterns vary quite widely. Employers in some countries provide little occupational training while employers in other countries undertake extensive general training for workers to gain occupational qualifications that can be used outside the firm. In the case of apprenticeship training, the extent of employer training is enough to reach two thirds of youth cohorts in Switzerland and Germany (Steedman 2010), but only about two percent of a cohort in the U.S. Even within countries, one can observe some supplying a considerable amount of training while others do not.

One possibility is that firms are generous in some countries and willing to pay for occupational training in the context of apprenticeships, while firms in other countries take a narrow perspective and are unwilling to bear the costs of training. Another is that institutions in some countries and industries provide the structure and in-depth information that is especially favourable to employer-led training. Also, incorporating more realistic elements into theory can potentially explain why some firms supply substantial training and why others do not.

This analysis examines several research questions, including: (1) What modifications to human capital theory can help explain why firms offer general training, in the form of apprenticeship-based occupational training? (2) What are the barriers to

training investments associated with the inappropriate accounting treatment of human capital? (3) What does the empirical literature show concerning returns to employers? (4) Why might firms that were not offering apprenticeships begin to do so? The concluding section discusses the implications for policy initiatives aimed at expanding apprenticeship.

2 Modifications of the Theory

One rationale for providing general training is the role of imperfect and asymmetric information. Employers providing training are often in a better position to judge the worker's productivity than are outside employers (Katz and Ziderman 1990). Another rationale for employer-led general training is imperfect information and other market imperfections can allow employers to pay trained workers less than the gain in their productivity without losing them to other firms (Acemoglu and Pischke 1999). One reason is that the employers providing the training are in a better position to judge the worker's productivity than are outside employers. An employer knows only a modest amount about workers when they enter the firm. One way of learning more is to observe how they learn, especially on the job. Another possibility is that general skills complement specific skills. As a result, increasing general skills raises workers' ability to use their specific skills. Interestingly, transparent skill standards could erode the information advantage for employers (Greenhalgh 2002). Still, several studies show positive impacts of general training on firms' productivity and profitability (Barrett and O'Connell 2001; Bassi and McMurrer 2004).

Another example of how providing general training can benefit firms comes from Cappelli (2004), who argues that imperfect information might be a reason to offer tuition benefits. It is difficult to sort workers whose qualifications are similar on paper. But when tuition benefits are offered, the applicants with more interest in learning relative to other applicants with the same paper qualifications are more likely to apply and use the general training. These workers may have more motivation and an unmeasured skills advantage. Cappelli (2004) finds evidence to support the notion that workers who take up tuition benefits are more effective than other workers with the same observed characteristics.

With respect to skill upgrading, employers can limit training to workers most likely to benefit and to stay with the organization. Recognizing that some critical occupational skills can only be learned at the workplace, employers may choose to undertake some training while collaborating with educational institutions and coalitions of organizations in the same industry. Because skill requirements and the best methods for learning relevant skills vary across occupations and industries, we would expect training patterns differ as well.

Still another issue is risk and uncertainty. Typically, employer investments in training are generally irreversible. Employers cannot take back knowledge or require reimbursements from workers after the fact. This irreversibility, combined with uncertainty about productivity outcomes from training, has implications for

evaluating employer returns to training investments (Jacobs 2007). In particular, the standard present value calculations do not necessarily serve as the correct guide. Instead, in an investment decision under uncertainty and irreversibility, one should take into account the option value of the additional trained worker. When the training is completed, the firm has the option but not the obligation to hire the trained worker and/or utilize the skills learned from training. This option value raises the firm's returns and increases the likelihood that they will invest in training. Leuven and Oosterbeek (2004) consider firm-specific investments in on-the-job training. Given uncertainty about the productivity returns from irreversible investments in particular workers, the firm's investment creates a real option that is especially valuable.

Other studies highlight the impacts of organizational attributes and strategies on worker training. For example, the incentive to train should be higher for those organizations that have to delegate decision-making, that are large and have high monitoring costs, and that promote from within instead of hiring from the labour market for high-level positions. Knoke and Kalleberg (1994) find that organizations that are large, promote from within, and have formalized job structures provide more worker training. Osterman (1995) shows that organizations make trade-offs between training existing workers and hiring workers with previously developed skills and that organizations train more when they use flat hierarchies, worker involvement, and teamwork and devolve decision making to the line level. Surprisingly, his estimates reveal no increase in training related to job ladders.

Firms can benefit in other ways from employer-led training. At least as far back as 1962, learning by doing has been incorporated into models of economic growth (Arrow 1962). Bauernschuster et al. (2009) document one mechanism affecting the firm and the economy: a positive impact of employer-led training on innovation. They first point out that:

Because of the rapidly changing environment of today's world in which human capital derived from formal education (schooling, vocational education) depreciates quickly, learning by doing, in the form of in-firm training, may be an additional way to continue to accumulate leading-edge knowledge. (Bauernschuster et al. 2009)

The authors use data from over 3,000 establishments in Germany who report on whether they introduced a new product or service in the past two years, newly adopted a product or service or enhanced an existing product or service. Information on training in the periods prior to the innovation period comes from questions about whether firms encouraged training by at least partly financing the training or by releasing workers for attending training. Using data on other firm characteristics as well as an identification strategy for causal inference, the authors find that a ten percentage point increase in training intensity translates into an eleven percentage point higher propensity to innovate.

Although several pieces of evidence show high returns to employer-led training, some studies are cautious about drawing causal conclusions. Bartel (2000) finds research from a variety of perspectives show significant benefits to employer-led

training, many of the studies do not measure the costs of training. Still, she concludes that the available evidence indicates high estimates of returns for employers.

A study of the impact of training on the productivity of British industries uses 14 years of panel data, an approach that allows the researchers to control for self-selection based on unobserved industry differences (Dearden et al. 2006). The authors find significant effects on productivity and wages. The results indicate a sharing of the productivity gains from training, with a one percentage point increase in increase in training leading to a 0.6 percent increase in value added per hour and about a 0.3 percent increase in hourly wages.

3 Accounting Treatment of Human Capital

One rarely noted issue is the inappropriate accounting treatment of human capital investments. Training investments, like other investments, incur costs in one year, but benefits accrue over several years. In the case of physical investments, the income statement does not assign the full costs of the investment in the year the purchase occurs, but rather only those costs that reflect the amount of the asset used up during the current year's activity. In contrast, human capital investments undertaken in a particular year are fully expensed in that year. This policy reduces the after-tax costs of financial incentives for training. On the other hand, investments in human capital are not reflected in the balance sheet as an asset. As a result, the accounting information shows companies investing in human capital showing lower profits that would an accurate measure of the performance of firms.

To highlight the point, Bassi and McMurrer (2004) provide a simple example:

Consider two organizations that are identical in all but one respect: Company A makes substantial investments in skills, while Company B does not. What will be evident to any analyst comparing the companies' income statements is that Company A has higher overhead for selling, general and Administrative expenses, and correspondingly lower reported earnings, than Company B. What will not be evident, however, is that some of Company A's expenses are actually investments in future productivity. Consequently, Company A's stock price would be expected to be lower – at least in the short run – than Company B's. The decision of Company A to invest in employee skills thus occurs despite pressures from financial markets. (Bassi and McMurrer 2004)

Since stock prices depend more on these accounting profits than on real value, the market underestimates future gains in the high training firms but over time, the added profits associated with training materialize, accompanied by a higher stock price.

In 2012, the Society for Human Resource Management (SHRM) and the American National Standards Institute (ANSI) drafted 'Guidelines for Reporting on Human Capital to Investors'. The guidelines called for financial statements to include key indicators concerning the work force that are relevant to economic performance. As the report pointed out:

Human capital has a material impact on organizational performance and thus is of interest to investors. Establishing credible and durable measurements of human capital creates a more complete picture of the capability of an organization to create value for customers and shareholders. (Society for Human Resource Management 2012)

According to the report, measuring human capital is a difficult task, but some measures can help investors understand strengths of an organization. Expenditures on employer-provided training represent investments the firm is making in return for future productivity. The report recommends isolating: compensation cost of employees providing and receiving training, the costs for third party trainers, travel costs, facility costs, software purchases, courseware purchases, and tuition reimbursements. The report does not go so far as to count training expenditures as depreciable assets on the balance sheet. Still, the clear presence of this and other employee-related indicators might affect company valuations and thus provide an incentive to top executives to increase training.

A former President of a General Electric division remarked: “Accounting for human capital investments must become more like capital investment accounting (...)” (Echols 2005). Currently, financial reports that expense training costs may distort company decisions away from human training. Under alternative approaches, training may begin to look more profitable and increase in scale.

4 Employer Investments in Apprenticeship Training

Firms recognize that investments in apprenticeship training ultimately provide workers with the skills required to qualify for certification in an occupation, certainly skills that can be applied in other firms. Yet, while many expect firms to avoid investing in general training, a large number of employers invest in training workers for occupational skills that yield a portable credential that has value outside the training firms. The traditional human capital theory can account for these investments only by assuming that workers pay for much of the training by foregoing some part of their wages. With modifications of human capital theory, however, investments in apprenticeship begin to make sense.

But, why do patterns of apprenticeship investment vary so widely across countries? Perhaps in some countries, employers see that preparing workers with occupational skills is a job for the school system while others believe that having enough highly skilled workers requires their own investments. One potentially important factor is whether the government does or does not pay for all or most of the academic component of apprenticeship training. While in most countries with strong apprenticeship systems, the government pays the costs of related classroom instruction, U.S. firms are responsible in whole or in part for even the academic component of the vocational training. At the same time, firms in countries with weak apprenticeship systems expect the educational system to prepare workers with occupational skills required at the workplace. Often, however, the training outcomes yield

graduates who are not well prepared for the realities of the workplace, partly because of their lack of work experience in the relevant field.

Another possible explanation is the presence or absence of a structured system that incorporates skill standards, widely dispersed knowledge and information about apprenticeship investments, clear expectations of apprentices and employers, well-specified occupational credentials, public support through funding of at least the classroom instruction, and a societal recognition of the legitimacy of a 'dual' system that combines work-based with classroom learning.

Labour restrictions can play a role, since licensing often requires training of the type achieved through an apprenticeship. However, such restrictions vary in ways not always consistent a link to high levels of apprenticeship. A good example is England, where apprenticeship places have increased dramatically without any change in licensing requirements.

The high penetration of apprenticeships in countries with centuries of experience with apprenticeship (Austria, Germany and Switzerland) suggests to some observers that cultural traditions and social norms play central roles in explaining differences in apprenticeship use. Still, traditions and norms cannot explain the scale of apprenticeship nor the reason why some firms hire five apprentices and others hire 15 or 25. Still, determining whether firms hire apprentices in a particular year and how many they hire is likely to depend on economic factors.

What, then, are the economics of apprenticeship from the standpoint of firms? What are the estimates of economic returns to employers when applying standard investment tools? Like most investments, apprenticeship investments require up-front costs but yield a flow of future gains over subsequent years.

The employers' main costs include:

- Wages and benefits of apprentices plus any payroll taxes;
- Wages, benefits, and payroll taxes paid for the time trainers and other staff devote to the apprenticeship program;
- Use of materials and equipment;
- Costs of setting up the apprenticeship;
- Recruiting and selecting apprentices; and
- Employer contribution to the costs of classroom training.

The main categories of benefits for employers include:

- Added value contributed by the apprentices to production;
- Reduced recruitment and training costs;
- Ability to pay slightly less than the worker's productivity as a fully trained worker because of the worker's familiarity with the firm and the worker's specific training and knowledge of the intricacies of the firm's technologies and social interactions;
- Reduced risk of not finding adequately and specifically skilled workers to replace retirees and others leaving the firm;
- Option value of extra skilled workers that the firm trained on its own; and
- Gains in innovation accruing from the apprentice's in-depth understanding of the work processes within the firm and the quality of training.

Not all of these costs and benefits are easy to measure. Nonetheless, researchers have managed to estimate the primary costs and benefits experienced by large numbers of apprenticeship sponsors in several countries. The most extensive studies have examined German and Swiss firms. One analysis by Muehlemann et al. (2010) used data from surveys of 1,825 German firms and 1,471 Swiss firms. Wages of trainers and of apprentices are the main gross costs of apprenticeship programs, but the study also measured the wages of management and training personnel, the wage costs of apprentices, time at the workplace, share of apprentices' workplace time devoted to tasks normally undertaken by unskilled and skilled workers, and the relative productivity of apprentices compared to regular workers.

Apprenticeships vary widely in gross and net costs. On average, the gross costs per year amounted to 15,500 € for German firms and about 18,000 € for Swiss firms. Although Swiss firms spend more than German firms, they derive substantially higher benefits from the value added by apprentices. Swiss firms gain over 19,000 € per year, more than double the 8,000 € in benefits that German firms attribute to the value of production generated by apprentices. For a three-year apprenticeship, Swiss firms are thus able to recoup the 54,400 € cost with benefits of 57,100 €, while German firms experience a 46,600 € cost but realize only 24,000 € in benefits. These averages involve net benefits for some firms and net investment costs for others. Muehlemann and Wolter (2014) report that about 30 % of German firms and 60 % of Swiss firms recoup more in benefits than they pay in costs.

Why do Swiss firms – where the wages of management, skilled and unskilled workers, and even apprentices themselves are generally higher than in German firms – show a small net benefit, while for the average German firm costs exceed benefits? Higher Swiss costs are offset by substantially higher returns for several reasons. First, apprentices are at work for more days in Switzerland than in Germany. Over the course of a three-year apprenticeship, Swiss apprentices are at work an average of 468 days, compared to 415 for their German counterparts. Second, when in the workplaces, Swiss apprentices devote an average of 83 % of their time to productive tasks, compared to only 57 % for German apprentices, who engage more in practicing tasks and in coursework. Third, the differences in time spent on tasks with no direct value to the firm are significant. Swiss apprentices allocate only 13–21 % of their time on these tasks, while in Germany these tasks take up 31–57 % of the time.

A fourth factor is that Swiss apprentices earn wages that are particularly low as a percentage of the wages of a fully qualified worker. In fact, the apprentice wages are so low that Swiss apprentices may bear some of the general training costs by working at a wage lower than their wage in a non-apprentice job. Becker certainly allowed for the cost burden of general training falling on workers.

One striking feature of apprenticeship programs in both countries is how quickly apprentices advance through their training and move from unskilled to skilled tasks. In Switzerland, the productivity of apprentices rises from 37 % of a skilled worker's level in the first year to 75 % in the third (final) year. The increase in Germany is just as rapid, increasing from 30 to 68 % of a skilled worker's productivity over the apprenticeship period. Thus, in both countries, apprentices accumulate substantial

and similar levels of human capital. Still, the data from Muehleemann's study suggest that nearly all German firms with apprenticeships (93 %) incur net costs, while a majority of Swiss firms (60 %) more than recoup their costs.

Not all recent studies indicate that German firms actually experience higher net costs for their apprenticeship investments. For example, Mohrenweiser and Zwick (2009) find that for many occupations, the gains to German firms during the apprenticeship period more than offset the costs. They draw their conclusion by estimating the impact of apprenticeships on company profits. For apprenticeships in trade, commercial, craft and construction occupations, their estimates show a positive impact on profits. However, in manufacturing, the effect on current profits is negative, indicating a positive net cost.

An extensive study of Canadian employers sponsored by the Canadian Apprenticeship Forum (2006) estimated employer costs and benefits of apprenticeships in 15 occupations. The study drew on responses from 433 employers, with at least 16 per occupation. All were four-year apprenticeships. The average gross costs ranged from about C\$78,000 for cooks to C\$275,000 for construction electricians. Average in-program benefits – measured as the revenue generated by the apprentices – varied widely as well, ranging from C\$120,000 for cooks to C\$338,000 for construction electricians. For all 15 occupations, employers earned a positive return to their apprenticeship investments during the training period. The average benefit was 1.38 times the average cost. Any post-program benefits would add to the economic returns.

Post-training benefits of apprenticeship programs are especially important, but are not easy to quantify. They include reduced recruitment costs, training related to the company's specific procedures and enhanced wage stability (because outside hires can upset the relative wage balance). A recent paper by Blatter et al. (2016) highlights the incentive to train stemming from hiring costs that are high and that rise with the number of hires. The authors cite evidence that the costs of a skilled hire can be one to two quarters of wages. Using data from Switzerland, they find that a one standard deviation increase in average hiring costs is associated with more than half of a standard deviation increase in internal training in the form of added apprenticeship positions. A survey of German employers by Beicht et al. (2005) finds savings in recruitment and training costs averaged nearly 6,000 € for each skilled worker trained in an apprenticeship and taken on permanently. The authors also cite other benefits – including reduced errors in placing employees, avoiding excessive costs when the demand for skilled workers cannot be quickly filled, and performance advantages favouring internally trained workers who understand company processes over skilled workers recruited from the job market. Taking all of these benefits into account appears to make apprenticeship investments a net gain for employers.

Another benefit to firms rarely captured in studies is the positive impact of apprenticeships on innovation. Innovations are critical to success in a competitive environment. Well-trained workers are more likely to understand the complexities of a firm's production processes and therefore identify and implement technological improvements, especially incremental innovations to improve existing products and

processes. A study of German establishments by Bauernschuster et al. (2009) documented this connection and found a clear relationship between the extent of in-company training and subsequent innovation.

Summarizing the best studies of apprenticeship, Muehleman and Wolter (2014) have concluded:

Empirical evidence shows that in a well-functioning apprenticeship training system, a large share of training firms can recoup their training investments by the end of the training period. As training firms often succeed in retaining the most suitable apprentices, offering apprenticeships is an attractive strategy to recruit their future skilled work force. In addition – as long as skills are standardized and nationally certified – those apprentices leaving the training firm after graduation ensure that other firms can recruit a sufficient number of skilled workers from the labour market. (Muehleman and Wolter 2014)

Employer expressions of support for apprenticeships are quite common. Especially striking are the positive attitudes of employers that have recently adopted apprenticeship programs. England and Wales are particularly interesting in this regard because of the large increase in the number of firms there that are now offering apprenticeships (well over 100,000). A study of more than 4,000 employers found that nearly 80 % were satisfied with their apprenticeship program, while only six percent were dissatisfied.

Nearly three in four employers mentioned improved productivity as a primary benefit, with most highlighting other outcomes likely to improve profitability, product or service improvements, better staff retention, and the introduction of new ideas and innovations. Over 40 % of employers reported that apprenticeships helped them win new business. About 80 % of employers report that they expect to continue offering apprenticeships and another 11 % are considering doing so but are not certain.

Sponsors of registered apprenticeship programs report high levels of satisfaction with this approach to skill development (Lerman et al. 2009). In a representative survey of 947 sponsors, 97 % stated they would recommend the program to others, with 86 % recommending it ‘strongly’. The benefit cited by over 80 % of sponsors was the apprenticeship program’s role in meeting the demand for skilled workers. Another major benefit was that the apprenticeship programs show reliably which workers have the skills needed. Other benefits, cited by 68 % of sponsors as very important, were raising productivity, strengthening worker morale and pride, and improving worker safety. A majority of sponsors also reported benefits in worker recruitment and retention and in meeting licensing requirements.

One concern about encouraging intensive, employer-led training is that firms will be unable to recoup the costs of training because others firms will hire the newly skilled workers away from the training firm or drive up their wages. ‘Poaching’ is the name of this process. Some apprenticeship sponsors viewed poaching as a significant problem, but surprisingly, 46 % of sponsors did not perceive it as a problem at all. Still, even among sponsors who perceived poaching as a problem, about 85 % strongly recommend apprenticeship to others.

5 Barriers to Employer-led Training

Given the apparent benefits of apprenticeship and other forms of employer-led training, why don't employers do more of it? Are cultural and legal barriers sufficient to deter employers from starting apprenticeship programs? Are countries with flexible labour markets and few traditions of apprenticeship doomed to provide limited numbers of apprenticeships? Are the structural barriers so strong as to prevent expansions of apprenticeships?

A common response by many employers not currently offering apprenticeships is in line with Becker's theory of the rational fear of losing their investments because of other firms will bid up the worker's wage, once the worker becomes well trained and more productive. Another commonly cited barrier is the difficulty of measuring the costs and benefits of training. When a skilled worker spends time training a less-skilled worker, the lost production is not always clear. Measuring benefits is often even harder. Even the category of gains may vary by firm. For some, the gains may take place when fewer serious accidents or medical errors take place; for others, in the form of lower expenses on maintenance; and for still others, through higher profitability attained through innovation.

A third barrier to employer-led training in general is the lack of knowledge about what type of training will work best for the organization. As Bassi (2011) points out, the characteristics of training programs that yield the highest Return on Investment (ROI) vary with the size, maturity, industry, and other business needs. Employers thinking about incorporating occupational training, especially formal occupational training in the context of apprenticeships, must determine content standards (what completers should be able to accomplish), a curriculum, the role of courses vs. work-based learning, the effectiveness of mentors, and the methods for determining whether the trainee is achieving sufficient mastery in an occupation to graduate. Measurement and evaluation of training impacts is difficult, although several approaches have been developed for doing so (Bassi and McMurrer 2004).

A fourth barrier is scale. Setting up a formal training program and exposing workers to a wide range of tasks is especially difficult for small companies. They often lack the expertise and the cost per worker becomes prohibitive since the training will cover few workers. These problems can be overcome with the appropriate public and private institutions, such as public technical assistance in setting apprenticeships or consortia of employers in the same industry sector organized by private intermediary organizations of government entities. In some cases, a major firm can assist in the training efforts of small firms that are customers or suppliers. One example is the development of Cisco Academies, which use classroom training and on-line learning to train students and help them prepare for industry-recognized certifications in information and communication technology careers.¹ Members of England's Association of Employment and Learning Providers successfully coordinate apprenticeship training for groups of small firms.²

¹ See <http://www.cisco.com/web/learning/netacad/academy/index.html> for a description of the program.

² See Making a Difference, Association of Employment and Learning Providers, Ltd, Bristol, U.K. <http://www.aelp.org.uk/news/general/details/aelp-strategic-prospectus-making-a-difference/>

6 Marketing, Knowledge of and Technical Assistance for Apprenticeships

Observers commonly assume that firms have chosen rationally not to develop apprenticeships and ask the following question: “(...) if it makes sense for firms to hire apprentices, why aren’t they doing so today?” The assumption of rationality is generally a powerful explanation and one that requires special evidence to overcome.

One test of this rationale for low use of apprenticeships is to examine how firms respond to learning about apprenticeships and how they can affect business operations. Another barrier to overcome is the absence of a well-specified system, with clear standards and government extensively providing relevant classroom-based instruction, limits apprenticeship expansion.

Two recent developments can be thought of as natural experiments testing the potential role of marketing, increasing information and technical assistance. If firms have been behaving with knowledge and self-interest in choosing not to offer apprenticeships, then changes in marketing, information, and technical assistance would presumably do little to stimulate firms to alter their hiring and training practices. However, if firms respond positively to marketing, information, and technical assistance by expanding apprenticeships, then firms can be convinced of the value added by apprenticeships. Put another way, just because firms did not see apprenticeships as profitable in the past does not necessarily mean that firms will not provide apprenticeships in the future when providing with appropriate tailored information about how valuable apprenticeships can be to the firm.

The interventions in South Carolina within the U.S. and England show that many companies can be persuaded to provide apprenticeship training, once the information and organization skills become available. South Carolina’s successful example involved collaboration between the technical college system and a special unit devoted to marketing apprenticeship. With a state budget for *Apprenticeship Carolina* of \$1 million per year as well as tax credits to employers of \$1,000 per year per apprentice, the program managed to stimulate more than a six-fold increase in registered apprenticeship programs and a five-fold increase in apprentices. Especially striking is that these successes – including 4,000 added apprenticeships – took place as the economy entered a deep recession and lost millions of jobs. The costs per apprentice totalled only about \$1,250 per apprentice calendar year, including the costs of the tax credit. Although apprentices often can access South Carolina’s Technical College system and attend at low cost sensible alternative for the classroom component, generally, the public sector in the U.S. pays little or nothing for the academic component of apprenticeships.

The marketing involved both statewide campaigns but more importantly sales and technical expertise provided to individual firms. The program provides free consulting so that firms learn how apprenticeships can work well in their organizations. The staff is made up of people with an excellent ability to listen to firms about their needs and, where appropriate, sell firms on how to build a talent pipeline

through the use of apprenticeships. *Apprenticeship Carolina* works closely with the Economic Development units in trying to persuade firms that locating in South Carolina will allow them access to a good training system involving technical colleges and a structure for learning about and expediting apprenticeship training.

The director of *Apprenticeship Carolina* reports that once employers fully understand apprenticeship training, it becomes easy to convince them to start apprenticeship programs at their firm. In fact, once firms meet with an official representative from *Apprenticeship Carolina*, about 70–80 % of firms have started apprenticeship programs.

Britain's success in expanding apprenticeships from about 150,000 in 2007 to over 500,000 in 2013 offers another example for how policies can stimulate apprenticeships, even among firms that previously had no interest in and little knowledge about apprenticeships. The National Apprenticeship Service and industry skill sector councils have provided national marketing and general information. Leaders from all political parties have strongly endorsed apprenticeship expansion. In addition, the British government has offered incentives to local training organizations to persuade employers to create apprenticeships. In addition, England's apprenticeship system builds to some extent on the concepts and language of the National Vocational Qualification system.

As in South Carolina, England relies heavily on sales units within these training organizations to work closely with individual employers as a kind of retail marketing. Since 2007, private sector training providers and Further Education colleges (FE) persuaded over 100,000 companies to adopt apprenticeship training. Incentives are provided to small and medium enterprises at a rate somewhat higher the South Carolina tax credit. For all employers, the government pays a proportion of the training costs for apprentices, depending on their age; 100 % of the training costs if the apprentice is 16–18, 50 % of the training costs if the apprentice is 19–24, and up to 50 % of the training costs if the apprentice is aged over 25. The results in England show that providing firms with useful information, help in making the transition, and funding for at least the related courses, many firms will start or increase apprenticeship programs.

Overall, the evidence is strong that it is feasible to stimulate firms to hire and train apprentices at scale even in countries without the cultural traditions and labour regulations that are said to be prerequisites for a robust apprenticeship system. Moreover, the apprenticeship expansions are likely sustainable given the results showing high returns to firms that use apprenticeship as a major part of their talent management strategies.

7 Summary and Policy Implications

Robust apprenticeship systems can enhance skills and wages, reduce youth unemployment, raise economic mobility, increase the quantity and quality of middle skill careers, and strengthen the U.S. manufacturing sector. The experience of several

European countries documents many of the benefits of apprenticeship systems and offers lessons for what a large system requires. Any such system must rely on firms and other employers to choose to offer apprenticeships. But what causes some employers to offer apprenticeships while other employers do not?

This section summarizes answers to this question and to more specific the research questions. The first findings are that theoretical modifications can justify apprenticeship investments based on imperfect information, imperfect competition, the joint production of skill and output, and limiting the risks involved in having too few skilled workers. One theoretical barrier to investing in apprenticeships is the failure to treat human capital as an asset on a firm's balance sheet. The empirical literature on apprenticeship investment, though limited, suggests solid returns for employers, partly because the apprentice's contributions to output allow firms to recoup most or all of the firm's outlays on apprenticeship. Finally, the chapter describes a successful outreach to firms showing the importance of direct marketing and information in moving firms to begin apprenticeship programs.

While expanding apprenticeship in countries with modest levels poses challenges, this paper argues that firms can be attracted to participate without substantial budget outlays. The key components include a structure for skill standards, methods for assessments apprentices and curricula, marketing and information efforts at the national and subnational levels, a sales and technical assistance initiative to help firms see the value of apprenticeships in their own operations, modest direct incentives to firms to participate, and at least partial funding for the academic components of apprenticeship. Developing these elements requires political support, ideally the type of bipartisan support for apprenticeships on display in England.

Several questions remain about jumpstarting a system to expand in the U.S. and other countries. One quandary is whether to focus almost entirely on youth or to include young adults at least through their late 20s. Employers generally want more mature workers but are willing to accept youth since the wage required to attract them into the program is lower for youth. Another question is: what are the roles that industry associations will be playing?

One lesson from Germany and Switzerland is the effectiveness of integrating apprenticeships into late secondary or early post-secondary education. Such an approach has several advantages. Pay can be a lower share of skilled worker wages for students in their teens because competing jobs pay less than for older workers. Moreover, it is acceptable to pay apprentices a low wage when most are still living with their parents. Swiss apprentices commonly earn only about 20 % of the wage of a fully skilled worker.

Governments are likely to pay for apprentice-related courses in a period when schooling is provided free on a universal basis. Guidance can be economically provided to students. And young apprentices are able to learn good habits right away instead of having to unlearn bad work habits. Another lesson from the German and Swiss experience is the importance of credible skill standards and systems for verifying the skills of apprenticeship completers and for training trainers. Such a structure streamlines the process by which firms begin providing apprenticeships.

Drawing on these and other lessons can contribute to building scale into apprenticeship in the U.S., thereby yielding substantial gains for workers and firms. If the U.S. were to reach the share of apprentices in the U.S. workforce as in the workforces Australia, Canada, and England, there would be four million apprentices, about ten times the approximately 400,000 today. With effective marketing and public support for related classroom training, U.S. employers would see how quickly their training investments pay off and would likely create far more apprenticeships than they currently do. The results for workers would be higher wages, more rewarding careers, and increased social mobility. American firms would realize productivity gains and increases in innovation. Overall, an expanded apprenticeship system would improve substantially the economic and social welfare of the U.S.

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Chapter 17

A Qualitative Analysis of High School Level Vocational Education in the United States – Three Decades of Positive Change

Christopher Zirkle

Abstract Historically plagued by concerns about the quality of the curriculum, instruction, vocational education teachers, and responsiveness to the needs of the workplace, the United States vocational education system has long suffered from negative perceptions among students, parents, school personnel, policymakers, and business and industry representatives. However, in the years since the publication of *The Unfinished Agenda* (National Commission on Secondary Vocational Education. *The unfinished agenda: the role of vocational education in the high school*. National Center for Research in Vocational Education, Columbus, 1984), a highly critical report authored by The National Commission on Secondary Vocational Education, the U.S. vocational education system has undergone many changes and reforms. Many of these changes have focused on the vocational education curriculum and have been directed at ensuring a supply of skilled labour to address the skills gap that exists between the abilities of workers and the needs of the workplace. Other changes have increased linkages to post-high school training to meet the needs for a more educated workforce. Additional efforts have focused on increasing school-business/industry collaboration, improving teacher quality and marketing the value of vocational education. Challenges still remain, including funding for vocational education, providing career awareness and guidance for students as they progress through school, and educating an increasingly diverse high school student population.

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1 Prologue

For most of the twentieth century, the Vocational Education¹ system at the secondary (K-12) level in the United States was seen as *second-rate* and as a dumping ground for students who were unmotivated, had behaviour problems, or who struggled academically. Policymakers, business and industry representatives, parents, and students continually questioned the effectiveness of Vocational Education programs.

In addition, during the 1980s and early 1990s, a multitude of education reports were published describing the poor performance of America's schools. *A Nation at Risk* was published in 1983 by the National Commission on Excellence in Education in response to the realisation that other countries were matching and surpassing the educational accomplishments of the United States. A bellwether report related to vocational education was published in 1984 by The National Commission on Secondary Vocational Education entitled *The Unfinished Agenda*. This highly critical report detailed a myriad of problems with the U.S. vocational education system, including the closure of vocational courses, little or no academic rigor in vocational programs, a lack of accountability and standards for instruction, poor teacher training, a shortage of postsecondary education options for high vocational education graduates, little business and industry involvement in vocational education, and a lack of access to vocational education for students with disabilities and limited-English students. In 1988, The William T. Grant Foundation, Commission on Work, Family and Citizenship, published *The Forgotten Half: Non-College Youth in America*, that examined the approximately 20 million 16–24 year-olds who do not pursue a college education. The report detailed the shrinking opportunities in the workforce for this group of individuals and suggested making available a better *first chance* that would emphasise improved schooling in general to give non-college youth better preparation for entering the workforce. *Workforce 2000*, published in 1991 (Boyett and Conn 1991) focused on social, economic, and political issues, as well as educational concerns, and emphasised the coming demographic changes in the United States workforce. The Secretary's Commission on Achieving Necessary Skills (SCANS) (1991) published *What Work Requires of Schools: A SCANS Report for America 2000*. This report defined skills that students needed to succeed in society. In 1994, the United States Department of Labor published *The National Assessment of Vocational Education*. The document acknowledged the poor labour market outcomes of high school graduates and proposed goals for a new system of workforce preparation.

¹ Author's note: Vocational education 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 name change officially occurred in 2006 via legislation but had been slowly implemented by states for almost a decade (Threeton 2007). For the purposes of this paper, however, the author will use the term Vocational Education, as it is the one most commonly used in international circles.

In response to these challenges, toward the end of the twentieth century, the secondary vocational education system began instituting several changes and reforms that began to focus on making itself more responsive to stakeholders, more flexible to meet student's needs and the needs of the workplace, more academically rigorous, and making vocational programming more attractive as an educational option to students, teachers, school personnel and parents.

The first major change was largely symbolic: changing the name of the discipline of Vocational Education to *career and technical* education. In 1998, the professional association for Vocational Education, the American Vocational Association, voted to change their name to the Association for Career and Technical Education, and individual states and their education departments began to follow, dropping the Vocational Education term in favour of career and technical education. This change was instituted largely to address the negative perceptions of the word *vocational* which, as stated previously, had a chequered past.

2 Impetus for Change

In the United States, running parallel with the need for programmatic change in the vocational education system, were many changes and shifts in the social, economic and educational environments of the country.

As the U.S. struggled to maintain their place as the leader in the global economy, the secondary (grades K-12) educational system continued to receive close scrutiny from stakeholders. International tests of student achievement, such as the Program for International Student Assessment (PISA) and The Trends in International Mathematics and Science Study (TIMSS) pointed out discrepancies in U.S. students' academic performance when compared to their international counterparts. These comparisons were actually the stimulus for the many reports and reforms of the 1980s and 1990s and the performance of U.S. students has not improved much in the years since.

For many years of the first two decades of the twenty-first century, the U.S. has had high levels of unemployment, yet in many technically-skilled occupations, there have been many unfilled jobs. This *skills gap* in the U.S. workforce is a result of many factors, including the rapid rate of technological change in the workplace, which has increased the education and skill requirements for many occupations. Many of the unfilled technical skill jobs are geographically specific, such as welders in Louisiana and North Dakota, where energy companies are thriving, nurses in California, and information technology workers in Florida. In some more economically prosperous states, education and training programs have strained to keep up with the need for skilled workers.

There is also a belief that there is a *skills mismatch* in the U.S. workforce. Many individuals simply do not have the specific skills and knowledge that the workplace wants and needs. In the U.S., as in many other countries, there is a social fixation on a university degree. Many students and parents believe the only path to a successful

career involves holding a baccalaureate degree. In many parts of the country, this has led to an oversupply of four-year College graduates, with degrees of little value to the workplace. It also has led to the phenomenon of college graduates heading back to school at their local community college, to obtain additional education, perhaps even an Associate degree (Koeppel 2012).

High levels of youth unemployment are also problematic. Over five million young people aged 16–24 are neither in school nor working (Sum 2012). In some parts of the U.S., the unemployment rate among 16–24-year-olds is more than twice the national unemployment rate. Some of the high unemployment rate can be tied to the high school dropout rate, which is a significant issue for U.S. schools, especially in urban/inner-city areas. Approximately 1.2 million students drop out of school each year (National Dropout Prevention Network 2015) and the needs of the workplace for more educated workers do not correlate with the knowledge level of a young person who does not obtain a high school diploma.

Many of these issues are intertwined and involve other variables. The performance of U.S. students on international tests has led policymakers in most states to require more academic courses for graduation and less elective choices such as vocational education courses. The U.S. population is more diverse now than at any point in its history, with many different types of learners with different needs, many of whom do not do well, or see value in a strictly academic environment. The number of high school dropouts in the U.S. each year is in excess of 500,000 (National Center for Educational Statistics 2013). Studies of these high school dropouts have shown many of them believe relevant, real-world learning opportunities would have kept them in high school (Bridgeland et al. 2006; Dianda 2008; National Dropout Prevention Network 2013). There has also been a marked increase in standardised testing of high school students. These tests have been criticised for taking too much time from classroom instruction and for placing undue stress on students.

3 A Brief Description of Secondary Vocational Education in the United States

Vocational education in the United States is defined as education at less than the baccalaureate level. As such, much of the programming occurs in the last two years of high school (grades 11–12) and the first two years of postsecondary schooling (typically at a community or technical college). This section will focus primarily on vocational education programming in grades 11–12, within the secondary education system. To visualise the entire U.S. educational system and where vocational education programming fits, the following graphic is provided (Fig. 17.1).

Most secondary vocational education can be found in two types of facilities: comprehensive high schools and area vocational schools (now generally known as career centres). Comprehensive high schools offer a vast array of courses, including: university preparatory, basic academic, vocational, and remedial courses, in

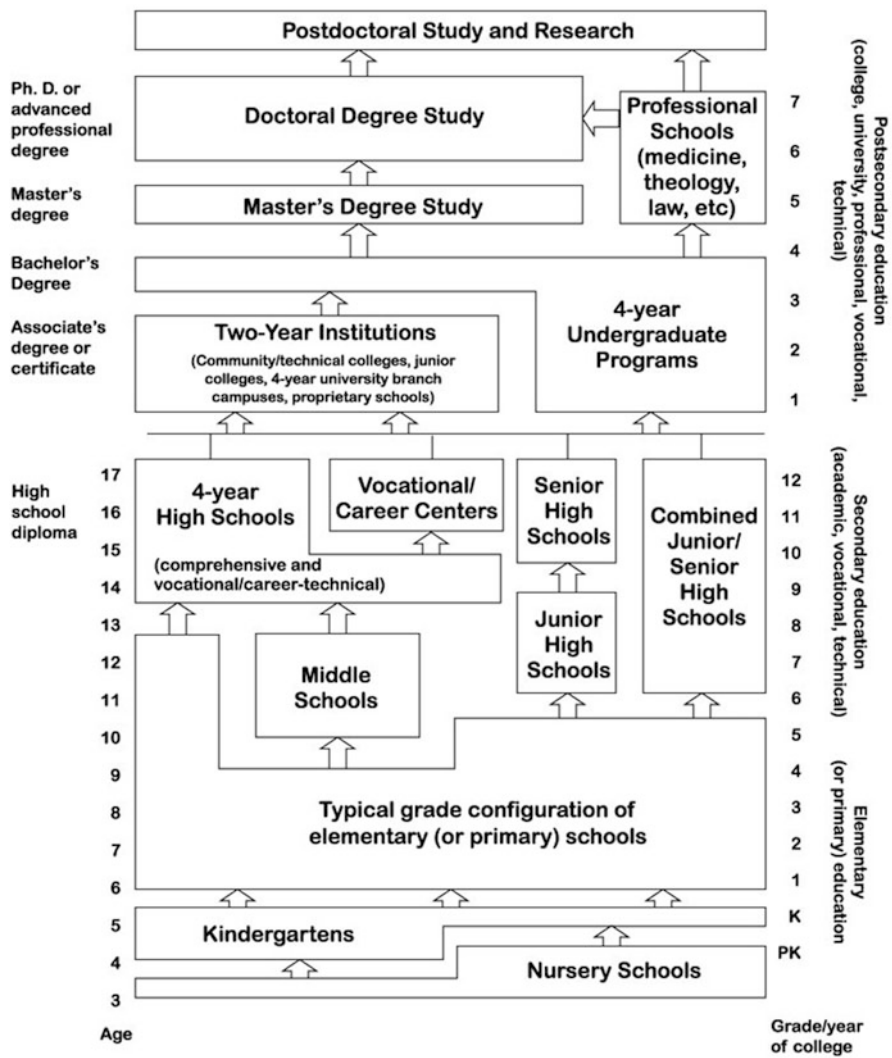


Fig. 17.1 The structure of education in the United States (Source: author's own compilation based on U.S. Department of Education, National Center for Education Statistics, Annual Reports Program; Zirkle 2011)

addition to courses and tutoring for students with special learning needs. Courses and programs in vocational education in these comprehensive high schools often reflect the communities in which they are found. For example, schools in rural areas may feature courses and programs in agricultural education and family and consumer sciences education, while schools in urban areas may feature programs related to business education, the health occupations, and marketing education. Some comprehensive high schools have designed career academies and schools

within a school focused on a specific vocational/career area or *cluster*. Career centres are designed specifically to offer vocational programming and are designed to serve students from a specified geographic area, from several comprehensive high schools. Students choose to attend the career centre. Economies of scale can be achieved, with many vocational programs offered, and courses that one comprehensive high school would find cost-prohibitive to provide can be offered to a large number of students over a larger geographic area. Students usually spend one-half of the school day in their vocational program area and the other half in academic classes such as math, language arts, and natural sciences.

In general, vocational education courses in comprehensive high schools are not focused on achieving high levels of student skill development, rather the classes are more introductory in nature. Typically classes are 45–55 min in length for either one semester ($\frac{1}{2}$ Carnegie credit) or one year (one Carnegie credit). In a school day, a vocational education course is perhaps one of six to eight courses a student may take daily (in addition to math, natural science, social science, and English, etc.). These vocational education courses are elective in nature, and are not generally required for graduation from high school.

In a career centre, classes/laboratories are two to three hours in length and focus on entry-level skill development and entry into postsecondary vocational training. One-half of the school day is spent in the vocational course; the other half is in academic classes to support the vocational area. This curriculum is followed for two years (grades 11 and 12) and students will complete 750–1,000 hours of instruction in the vocational area.

4 Areas of Study Within Vocational Education

In general, there have historically been six broad areas (fields of study) within vocational education. The first is agricultural education, which was one of the first three areas to be funded under the Smith-Hughes Act of 1917 (the first federal legislation written in support of vocational/career and technical education). A sampling of areas of study within agricultural education includes agricultural production, agricultural mechanics, animal science, horticulture, and landscape management. Technology impacts agriculture and therefore programs also exist in areas such as biotechnology and environmental sciences (Zirkle 2011). Business education includes programs in accounting, business administration and management, financial services and paralegal studies, along with information technology programs, such as interactive media, computer programming, and computer networking technology. Another of the first three areas of vocational education is family and consumer sciences education which contains programs that have a *family studies* orientation and may include courses and programs in subjects such as: personal development, resource management, life planning, nutrition, and wellness. Other family and consumer sciences education programs have more of a traditional vocational education focus and may include courses and programs in early childhood

education and care, fashion, clothing and interior design, culinary arts, and hospitality management. The growth in the health-care sector in the United States has resulted in a corresponding growth in the number and type of health occupations education courses and programs available to vocational education students. Many health care jobs that are in high demand in the workplace require less than a four-year degree. Specific programs offered in health occupations vocational education include areas such as dental assisting, emergency medical technician, nurse assisting and medical lab technician; many of these can be completed at the high school level, although some programs assume the student will continue their education post-high school to obtain further training. The fifth area of vocational education is marketing education and is the smallest of all the areas in terms of programs and actual students enrolled. The curriculum of marketing education focuses on how businesses plan, produce, price, distribute, and sell the many products and services demanded by consumers around the world (Marketing Education Association 2015) and includes courses in retail marketing and management, travel and tourism, entrepreneurship, and E-commerce. The final area is trade and industrial education; it is the last of the original program areas designated for funding by the Smith-Hughes Act. This area has the largest number of programs and contains many programs which have a long history in vocational education, such as automotive technology, carpentry, cosmetology, electrical trades and welding.

5 Pathways After Completion of High School Vocational Education

Historically, vocational education has been viewed as education for work, with students completing programs and entering directly into entry-level employment. For many vocational education students this is still the preferred pathway once they have completed high school and many do enter the workforce directly after school. However, many students delay entry into the workplace, primarily to pursue further education made possible by completion of a vocational program.

Many vocational education students go directly from high school to a community or technical college for additional education and training. These institutions offer short-term courses, one-year certificate programs, and Associate (two year) degrees in a variety of vocational-technical areas; therefore, this pathway is very common. Many high school vocational programs have articulation agreements with community and technical colleges, where students can actually earn some college credit in their high school vocational program. This provides them an opportunity to earn additional educational credentials (a certificate or degree) in a shorter period of time and also saves the student money on tuition costs.

Apprenticeship programs, mostly in the technical trades of construction, electrical, and graphic arts, are another option for vocational education students after high school. Modelled somewhat after the German system of apprenticeship, the United

States system currently has approximately 400,000 apprentices in programs across the country (U.S. Department of Labor 2015a). The apprenticeship approach includes on-the-job training under the supervision of experienced workers with connected classroom instruction. It is sponsored by employers, employer associations, or labour/management groups that can employ and train in an actual working environment.

For students desiring further vocational training after high school, the United States Armed Forces is an additional option. All of the branches of the military offer various vocational training programs and individuals can pursue vocational and technical licensing and certification while serving their country. The military also offers tuition assistance to service members after completion of their service through the federally funded GI Bill.

6 Funding of Vocational Education

Vocational education in the United States is an expensive undertaking. Equipment, supplies, and materials to appropriately structure courses and programs can be significant expenditures. In the United States, most elementary and secondary education is funded through local property taxes and from financial support from each state government. Vocational education has historically received financial support from the federal level through various legislative acts. The first, the Smith-Hughes Act of 1917, provided federal funding for vocational training in the areas of agriculture, trade and industry, and home economics. The funding provided salaries for teachers, supervisors, and directors of each area. In addition, the Smith-Hughes Act required state boards to draft plans relating to the use of funds, types of schools, equipment, courses of study, methods of instruction, teacher qualifications, supervisor qualifications, and plans for training teachers (Calhoun and Finch 1982). Various other legislative acts have built upon and revised various aspects of the Smith-Hughes Act. The current legislation, the Carl D. Perkins Career and Technical Education Improvement Act of 2006, provides 1.3 billion USD in federal support for vocational/career and technical education programs in all fifty states on an annual basis.

7 Vocational Education Teachers

There are approximately 239,000 vocational education teachers in the United States, according to the latest data from the United States Department of Labor (2015b). Vocational education teachers can become licensed in two ways: a traditional pathway that requires a university degree, such as a Bachelor of Science degree, and an alternative pathway that brings individuals into teaching directly from business and industry.

In the traditional pathway, students pursue a teaching degree and must complete other requirements as part of the degree, including:

- General/liberal arts education courses,
- Content preparation courses in the vocational subject to be taught,
- Teaching pedagogy courses,
- Field experiences (observation time in a school),
- Clinical practice (practice teaching under supervision),
- An exit test in the vocational content area,
- An exit test in teaching pedagogy.

After the degree is completed and all these requirements are met, the teacher can apply for a teaching licence from his/her state and begin applying for a teaching position. The growth in vocational programs in the U.S. is also expected to drive an increase in vocational teachers, with over 15,000 new teachers expected from 2015 to 2022, a growth increase of approximately 9 % (United States Department of Labor 2015).

With the alternative path, individuals wishing to become a vocational education teacher must meet specific education and work experience requirements. In general, minimum requirements include a high school diploma and three to five years of work experience in the subject to be taught. If the individual meets these requirements, the school can employ the teacher, and he/she can apply for a temporary licence. Then, while teaching, the teacher takes teaching pedagogy courses at a local university. These must be completed within a specified time frame, perhaps three to four years, at which time, the teacher is granted a full professional licence. All teachers, including vocational teachers, are also usually required to continue taking courses and other professional development activities throughout their teaching career.

The quality and preparation of vocational education teachers has long been criticised in a variety of reports and studies (Bruening et al. 2001; DeWitt 2010; Manley and Zinser 2012; U.S. Department of Education 1994). In some cases, individual state requirements for vocational teacher certification/licensure are very minimal compared to academic teachers. A national study found that requirements for the certification and licensure varied widely from state to state (Zirkle et al. 2007). This criticism has contributed to the negative perceptions of vocational education. Additionally, as with all areas of education in kindergarten through grade twelve (K-12) in the United States, vocational education 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 vocational education teachers, and to recruit qualified and talented individuals from industry to be vocational education teachers (Zirkle and Martin 2012).

8 Marked Areas of Change and Reform in the U.S. Vocational Education System

The aforementioned challenges faced by the U.S. vocational education system have prompted many changes and reforms that have resulted in significant improvements in the quality of courses and programs. This section will discuss these changes and reforms.

8.1 *Curricular Changes in Vocational Education*

As previously mentioned, vocational education has been described as education for work, where students entered directly into entry-level employment after completion of a high school program. However, the curricular mission of vocational education has been broadened considerably in the past three decades and this has resulted in many more options for students after program completion.

The view that vocational education was for students who were not academically inclined, or unmotivated, has been addressed through new curricular approaches, including the rigorous integration of academic disciplines into vocational education courses and programs. This approach recognises that academic subjects are intertwined with every occupation, and to be an excellent carpenter, nurse, or chef, one must possess academic skills and knowledge along with technical skill. The effectiveness of this approach has been demonstrated through studies involving the use of mathematics in vocational education programs (Stone et al. 2008) as well as literacy and vocational education (Park 2012).

Recognising that many students prefer to be active learners, project-based learning has become a common instructional method in vocational education courses and programs. These projects are often multidisciplinary, integrating multiple core academic areas. Project-based learning develops technical skills while incorporating rigorous academic content and focusing on skills needed by the workplace such as collaboration, communication and critical thinking. The academic preparation of vocational education students has been vastly improved upon, which better prepares them for the workplace of the twenty-first century.

While the United States Department of Labor, Bureau of Labor Statistics (2015) has never attempted to estimate the number of times people change careers in the course of their working lives, it is well-known that workers in the U.S. are likely to change jobs and even careers many times over the course of their working life. This has prompted vocational education curricula to move away from preparation for one specific career. The curriculum has been organised into *career clusters*, which are curricular frameworks in broad career areas, designed to prepare students to transition successfully from high school to postsecondary education and employment in a career area. The career cluster approach is built on the idea that students must continue their education after high school to become more broadly skilled. The

United States Department of Education has developed 16 of these clusters, including:

- Agriculture, Food & Natural Resources,
- Architecture & Construction,
- Arts, A/V Technology & Communications,
- Business Management & Administration,
- Education & Training,
- Finance,
- Government & Public Administration,
- Health Science,
- Hospitality & Tourism,
- Human Services,
- Information Technology,
- Law, Public Safety, Corrections & Security,
- Manufacturing,
- Marketing,
- Science, Technology, Engineering & Mathematics,
- Transportation, Distribution & Logistics.

The focus on further education also has led to more curricular improvements in vocational education. Improved ties to postsecondary education have been established, and vocational education now offers college preparatory courses and *dual credit* options in which students can earn both high school and college credit simultaneously and transfer these to postsecondary institutions via articulation agreements to provide for a seamless transition from high school to college. These agreements can also shorten the time it takes to earn an associate degree or additional industry certification.

8.2 Skilled Labour Needs and Industry Involvement

For many years, business and industry has been a critic of the product of the vocational education system: the students themselves. In large part, this criticism has come from the sidelines, as organisations across the country were reluctant to play a role in the education and training of students. This has slowly changed since the passage of the School-to-work Opportunities Act of 1994, which recognized the disconnect between the schools and the workplace, and that educators and employers must work together in a much more cooperative fashion (Zirkle 1995). The Act provided funding to develop work-based learning experiences involving employers, along with *connecting* activities designed to develop school-business partnerships. These connecting activities can include job shadowing, on-the-job training, and internships.

Even though the funding of the School-to-work Opportunities Act of 1994 was discontinued in 2000, vocational education has sought to utilize other funding

sources, including the Perkins Act, to continue efforts. This has led to many organisations, both large and small, to become involved with vocational education programming. Companies such as IBM, Microsoft, Oracle, and Cisco have designed their own curricula, professional development, and industry-recognized credentials. Professional Associations, including Automotive Manufacturing Technical Education Collaborative (AMTEC), The National Association of Home Builders, and the National Association of Manufacturers have created resources that allow vocational education programs to connect with employers' needs (National Association of State Directors of Career Technical Education Consortium 2014). The level of communication between schools and organisations has grown considerably in the past three decades.

These industry groups also provide advice and counsel to vocational education programs via participation on advisory committees, a requirement for programs to receive federal funding. Depending on their function, advisory committees may conduct activities in the following areas: curriculum and instruction, program review, recruitment and job placement, student organizations, staff development, community/public relations, resources, and legislation (Kerka 2002). Their participation brings valuable insight into vocational education programs and helps reduce the disconnect between schools and employers.

8.3 Improved Teacher Training

Successful vocational education programs have effective teachers who enhance student learning and provide opportunities for growth. States have taken steps to improve the quality of vocational education programs by developing alternative pathways for mid-career professionals to enter the teaching profession. These individuals can bring a wealth of work experiences into the vocational education classroom. Once employed, processes are in place to provide these individuals the opportunity to develop effective teaching skills. These processes have been developed to counter the claim that vocational education teachers are *less than* their academic teaching counterparts. Coursework, usually utilising universities, is focused on the unique needs of vocational education teachers, and includes courses/subjects such as:

- Teaching Methods,
- Curriculum Development,
- Instructional Strategies,
- Assessment of Student Performance,
- Learning Styles,
- Utilizing Technology in Instruction.

Universities with long traditions of providing vocational teacher preparation have developed pathways for this group to earn advanced degrees as part of their coursework. The Ohio State University and Pennsylvania State University both offer

options to earn bachelors and master's degrees while completing vocational teacher credentialing requirements (Zirkle 2014).

8.4 Vocational Education as an Integral Part of the High School Experience

The curricular changes mentioned previously are playing a large part in transforming the American high school. The 16 career clusters developed by the United States Department of Education have led to innovative approaches in delivering both academic and vocational education. The concept of career academies allows high schools to develop teams of teachers and students focused on a specific career pathway. Students can take academic courses related to the pathway, along with vocational courses designed to develop a broad set of knowledge and skills needed to be successful in the pathway. For many U.S. students, a common question is “*Why do I have to learn this?*” Academic subjects being taught within the context of careers helps to answer this question and make learning more relevant. The career academies are also likely to have dual credit and articulation agreements in place, to encourage students to continue their education after high school.

Interestingly, even with U.S. policymakers' obsession with requiring more academics (typically math and natural science) for graduation, this has not deterred students from taking vocational education courses in high school. For many years, the percentage of students who have taken at least one vocational education course in high school has remained steady at approximately 90 % (United States Department of Education 2009). Vocational education *concentrators*, those students taking three or more vocational education courses during high school, constitute 25 % of all high school students and in addition, this group has a high school graduation rate of 90 %, compared to an average U.S. graduation rate of 74.9 % (United States Department of Education 2010).

8.5 Recognising and Marketing the Value of Vocational Education

As previously mentioned, the image of vocational education in the U.S., as in other countries, has a tarnished history. The long-held perception that vocational education is not academically rigorous, only educates troubled students, and leads to dead-end employment still exists to a degree. However, the image is slowly changing, driven by several factors.

Many parents, educators, and policymakers have long believed that the pathway to success is with a university degree. Vocational education options have not typically been a consideration. However, the U.S. workplace's needs have been evolving.

A recent study projected 14 million job openings in the U.S. from 2008–2018 will go to individuals with an associate's degree or occupational certificate. Many of these jobs will be in technically skilled occupations, such as electricians, dental hygienists, paralegals and construction supervisors (Carnevale et al. 2012). These opportunities have a direct connection to high school vocational education programming and postsecondary educational options such as dual credit and articulation agreements. Many of these jobs will pay 35,000 to 75,000 USD annually, higher than many occupations traditionally associated with a bachelor's degree.

Additionally, many high school graduates accumulate significant debt while in pursuit of the baccalaureate degree. Many of these students graduate and are unable to find employment in a job market that currently requires a significant number of technically skilled workers. Some of these students find themselves back at a community or technical college post university graduation, taking classes to obtain skills employers want. This is a reflection of the disconnect between what American universities are producing and what the private sector and government needs. The vocational education pathway is less expensive, takes less time than the university pathway, and is targeted toward employment needs.

All of these events have begun to change the societal perceptions of vocational education. Students and parents are beginning to see that vocational education can offer another pathway to economic security in the U.S. workplace.

9 Remaining Challenges

As discussed in this chapter, many improvements have occurred in the vocational education system in the United States over the past three decades. These changes and reforms have materialised quickly, and were in many ways initiated by *The Unfinished Agenda* report published in 1984. As mentioned, the report was highly critical of the vocational education system, and pointed out many problems. The 30 or so years since have seen many improvements and much progress.

However, despite the improvements cited in this chapter, challenges to the vocational education system in the U.S. still remain and more work needs to be done. Many of these challenges are in the process of being addressed and will be corrected, while others are intractable and will take time and resources to fix.

Funding for high school vocational education in the U.S. has become very political in recent years. While no one disputes the need for a highly trained workforce, the process and policies to fund the education and training of young people has been hotly debated, as the U.S. political system seems to become more fragmented. Some state governors have begun developing initiatives to grow vocational education programs, especially in those states with strong agricultural, manufacturing and construction industries. For example, Ohio is developing vocational courses for middle and junior high school students (Young 2014), while Kansas' high school vocational education students qualify for free college tuition in approved technical courses offered at Kansas technical and community colleges. Quality vocational education

programs are expensive to offer, so the lack of funding will continue to be a barrier to program improvement.

The inability to have a collective national voice for vocational education points out the challenge with each individual state holding the responsibility for their own educational system (as required by the U.S. Constitution). Some states have invested heavily in vocational education, while others have not. As a result, vocational education programs across the country tend to vary in quality. Much of this is due to variables such as facilities, teacher quality, curriculum supports, and the like, but many of these are directly related to financial resources and governmental commitment.

Determining the goals and purposes of vocational education at the high school level is yet another challenge. Given the economic needs at the present time in the U.S., what should be the focus – preparation for work or preparation for further technical study? Or both? With limited financial and other resources, where should energies be directed? In addition, how should the effectiveness of either of these goals and purposes be assessed? Schools in the U.S. are supported in large part by individual property and income taxes, and public scrutiny of the performance of every educational program is ever-present.

Throughout the U.S. educational system at all levels, career exploration and guidance is minimal. Some of this is attributable to a lack of career guidance training for counsellors, teachers and school administrators; however, the aforementioned focus on *everyone is going to the university* has put career exploration at a low priority level in U.S. high schools, and has *pushed off* career choices to the late teens and early twenties. This has resulted in scores of young adults in the U.S. with unclear professional goals, which for many in U.S. universities, has resulted in changes of study major, delayed graduation, and tuition debt.

The demographic composition of U.S. society and the workforce has changed considerably in the past 25 years and will continue to diversify. This diversity will also affect the educational system, as larger numbers of younger Americans are ethnic minorities. Individuals with English as their second language will also present challenges to individual schools, as will students with disabilities and other special learning needs. Vocational education programs, with specialised laboratories, equipment, and materials, will have to find ways to meet these individual's needs.

Finally, the negative image and public perception of vocational education, while improving, still pervades the thinking of many students, parents and policymakers. Even though the perception is outdated and inaccurate, it is perhaps still the largest barrier to vocational education being fully embraced in U.S. society. However, as illustrated by this chapter, significant progress has been made on changing the image and public perception of vocational education.

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Part V
Europe

Chapter 18

Quality Doubts as a Driver for Vocational Education and Training (VET) Reforms – Switzerland’s Way to a Highly Regarded Apprenticeship System

Philipp Gonon

Abstract Currently, vocational education is being reformed all over the world. On the one hand, this is supposed to provide young people with access to the world of work or at least to make access easier for them, on the other hand vocational education for young adults is also considered an alternative to purely academic education. The latter, it is said, does only prepare for certain professions or is too little specific or not sufficiently relevant for the labour market. Compared to university graduates, young people with workplace training are said to be advantaged when it comes to employability. Furthermore, it is said, vocational education is rather congruent with practical talents and motivations, or vice versa many young people are neither willing nor capable of finding their way through an educational system, which is primarily determined by rewarding performance at school. Another aspect is the clearly higher public expenses connected to rather academic education, and finally one states that there also is the question of over-qualification and wrong qualification. These arguments are well known, not new, and they have been stated for years to justify a selective access to the academic career path.

However, also access to vocational education is not simply open for everybody, rather one may point out that also vocational education is of a selective nature. In contrast to school-oriented systems of vocational education, in case of workplace training it is the company, which decides about accepting young people for vocational training.

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1 Quality and (Vocational) Education

Although the discourse about quality issues seem to indicate that this debate would be a recent phenomenon in education, this paper develops another perspective, showing that quality is from the very beginning at stake in vocational education and furthermore a trigger for reforms and incremental changes.

1.1 *Smooth Transitions as an Indicator of a High Quality VET System*

It is well known that Germany and German-speaking countries have established VET systems, which are quite inclusive. They offer training opportunities in a broad range of occupations and thus allow young people to find their way to the world of work.

However, in recent years young people have increasingly been stating that it is more difficult to find access to vocational basic training in firms, which is illustrated by the growth of a – school-oriented – transitional system. This is due to both economic and structural reasons and to the potential of young people to apply for apprenticeships.

The trajectory into the world of work depends much on the economical structure of a country but also on the way that transition regimes are organized. We discern four different types, which are determined by the orientation of the transition (Table 18.1).

A gap between getting access to apprenticeships and VET and the firms who are willing to train has also been stated in the German-speaking countries. Nevertheless

Table 18.1 Transition regimes

Transition regimes	Countries (Example)	School	VET	Orientation of the Transition	Occupational focus
Universalistic	Sweden, Denmark, Finland	Not-selective	School-oriented model	Personal development	Unspecific, educational
Liberal	UK, USA	Not-selective	Market-oriented model	Early economic independence	Unspecific, function-oriented
Employment-centered	Netherlands, Germany, Switzerland	Selective in an early age	Dual model	Allocation of an occupational & social position	Vocational concept
Under-institutionalised	Italy, Spain	Not-selective	School-oriented model	Missing structures	Production-oriented

Source: Stolz and Gonon (2012)

the approach to offer vocationally oriented qualifications – as in the employment-centred transition regime – seems to be more adequate for young people in order to be integrated in the workplace.

Initial VET is in most countries a first step for getting access to the world of work. That is why that young people tend to find an apprenticeship contract or try to continue in a school, which is oriented towards occupational practice (Stolz and Gonon 2012, p. 21).

1.2 *VET as a Qualitative Alternative*

At least in Europe vocational education is generally the better solution or an outstanding distinct alternative to non-qualification, the latter allowing for clearly fewer options in economy and society. Basic vocational training for young people is considered a promising foundation for individual economic success, and also it is certainly connected to social acceptance (Billett 2011). Thus, in several European countries systems of vocational education have been established since long ago, or they are currently spreading to, on the one hand, provide young people with improved qualification for the world of work (Greinert 2004).

It is most of all three elements, which have been and still are significant for the position of vocational education as a whole. All of them result from identified deficits, which must be corrected. A state of lawlessness opens the doors for arbitrariness and uncontrolled development; just the same, without measures taken by the state many young people, most of all those with rather deficient performance at school, will find it difficult or even impossible to find access to vocational education (Mjelde 2006). Finally, it is stated, a kind of vocational education, which does not allow for connecting to the further educational system is less attractive for gifted youths (Kost 2013). For example for Switzerland these discourses can be attributed to certain periods of time:

1. Formalisation of vocational education by way of framework legislation (1880–1930);
2. Ensuring an inclusive and workplace-related access or transition to vocational education (1970–2015);
3. Opening an educational path to higher education, e.g. by way of a hybridisation of educational programmes (1990–2015).

These reforms, finding place in a certain period and being developed further in the following times, also have been discussed as issues of quality. Quality demands were raised if vocational education was capable of making sure that there would be a sufficient number of well-qualified young people. Moreover the completing ratio and if a sufficient number of youths deciding for vocational education to later connect to further education ran under the label of quality discourse.

Now in the following, however, neither an analysis of the term shall be to the fore, nor an analysis of where in the overall system of education the quality concept has left its marks. Rather, by referring to quality demands and reservations concern-

ing quality, the focus shall be on vocational education. This shall be done by way of a special, interaction-related view: Who speaks of quality all the time must have a reason for doing so. It seems as if then quality is not a matter of course: not all actors or circles and observers participating in the discourse accept this assumption as being given. Quality as a rhetorical point in the context of the educational discourse serves for convincing yourself and others that the domain one maintains is actually significant and successful.

2 Quality as a Demand

Speaking of quality must be understood as being multi-dimensional. Quality is defined not only by input, but also by process and output. Some might add outcome as a separate entity. Accordingly, several fields of the quality debate can be identified, as they are presented by the matrix below.

Traditionally, the quality of education and educational systems is connected to investments and providing resources. At a micro, meso- and macro-level a well-equipped learning environment, a good infrastructure and appropriately differentiated curricula, laws and decrees are still relevant for a well organised educational system. However, as has been the predominant view in recent years, they are by far no longer sufficient. Thus, attention has shifted towards process quality and results, as becomes obvious by the debates about standards, best-practice examples and benchmarks (Gonon 2008, p. 97).

Quality and quality assurance are not only a question of school organisation and management but are demanded for all fields of education. Thus also with educational policy, which is organised around the quality issue. The Copenhagen Process, so important for vocational education, essentially refers to this criterion. But also the Open Method of Coordination (OMC), by demanding improved quality, underlines the demand for comparative reporting. Finally also the Europe-wide Common Quality Assurance Framework, as expressed already by its name, basically operates by suggesting measures for improving the quality of education (Gramlinger et al. 2010). Under the sign of quality, in this context European recommendations for educational reform aim at more than a kind of vocational education which is immediately meant for the world of work. Often, the entire educational system, including universities, is addressed.

Also in Switzerland quality in the context of education has found a prominent place and has even become part of the constitution. In the amended version of 2006, Article 61a states:

Both Federal Government and the Cantons, as far as they are concerned, together provide for a high quality and permeability of the educational space of Switzerland.

The same is also found in Canton laws. Just the same, also the Züricher Bildungsrat (Zurich Council on Education) establishes guidelines for quality standards, and both school commissions and school administrations are declared to be responsible for and in charge of quality.

3 Quality as an Element of Vocational Education in Switzerland

Quality has also been established as a multi-shaped concept for Swiss vocational education. In the most recent Vocational Training Act, valid since 2004, a whole article is on quality (Federal Act on Vocational and Professional Education and Training 2015): Providers of vocational education assure the latter's quality, the Federal Government supports quality development, defines quality standards and supervises their keeping. In 2012 the Federal Government, the Cantons and organisations from the world of work as essential alliance partners created a Charter of the further Development of the Quality of Vocational Education in Switzerland (Charta Qualitätsentwicklung Berufsbildung Schweiz) which focuses most of all on the cooperation of actors and on attempts at constant improvement (Schweizerisches Bundesamt für Berufsbildung und Technologie (BBT) 2012). Recently, supported by the Federal Government and the Conference of Vocational Education Authorities (Schweizerische Berufsbildungsämterkonferenz), the employers side has worked out a quality handbook (QualiCarte) which is supposed to help companies with organising a – could it be any different? – “high-quality vocational basic training” (SDBB 2011). The newly created Commissions on Vocational Development and Quality (Kommissionen für Berufsentwicklung und Qualität (B&Q)), including both organisations from the world of work and other alliance partners as well as other representatives of practical work, are supposed to constantly adjust the quality of training to the demands of the world of work. The latter's high relevance for quality development and maintaining the companies' commitment in this field has also recently been supported at the Vocational Education Summit (Spitzentreffen der Berufsbildung) (SBFI 2014).

3.1 *Quality Concerns from the Historical Point of View*

From a historical point of view it becomes obvious that doubts concerning the quality of vocational education have again and again been stated. Often it has been lamented that not only it places too little weight on education but in particular that it contributes to further consolidating social disadvantages. Work or adjustment to the company as well as the social order were said to be fore, which is why one could not or was not willing to communicate anything beyond expert knowledge and skills. On the whole, it was stated, there were less time and fewer possibilities to acquire appropriate knowledge (Gonon 2014). More than adjustment to existing demands of production, one said, as well as adjustment to the social hierarchy, which was said to be congruent with the pre-determined division of labour, was not necessary. Not everybody understood these statements as criticism, but some considered these assertions a functional requirement (Schlieper 1963).

3.2 *On the Legitimation Crisis of Vocational Education in the 1970s*

However, quality concerns did not simply aim at the role of vocational education within the social and economic structure but also at its own performance. In particular in the period of developing modern vocational education that is at the end of the nineteenth century, a demand for reform was stated in the sense of a necessity of generally improving the quality of training by way of several measures:

Among the insightful circles of our trades as well as among the authorities there is no longer any doubt that these days a successful trade requires more comprehensive knowledge and skills than elementary school and practical apprenticeship could communicate, and that in the interest not only of trade but of the state community one must support a completion of vocational education. (Bendel 1894, p. 64 f.)

This historical quote from an influential reformer of vocational education indicates that already during the development period of vocational education in Switzerland one definitely identified gaps of company training, which could not be filled by elementary school but had to be coped with by increased school education as a completion of vocational training at the company. More legal guidelines, increased commitment by the public and the state, the latter having a supervisory function, were supposed to be understood as a contribution not only to the protection of young people but also, as it was expressed in those days, to “raising the trade” and the crafts and the appropriate training (Salzmann 1879).

These quality concerns characterised many debates on the further development of vocational education and its further reform, from the beginnings as far as into the 1970s. This constant and stubborn presence made the vocational educationalist Karlwilhelm Stratmann regarding Germany speaking of a permanent crisis of vocational education (Stratmann 1967).

Indeed, most of all in the 1970s it was the companies and their reform of training which was criticized. “Leere statt Lehre (emptiness instead of apprenticeship)” was a slogan in Germany and Switzerland, which was supposed to give expression to this discrepancy. One spoke of a misery of vocational education, which was, among others, identified also with the authoritarian structures of the companies. Consequently, one said, a democratisation of vocational education was necessary (Lempert 1971). Somewhat more optimistic was the demand by another vocational educationalist from the 1970s who at least identified “education within the medium of vocation” as a demand and possibility (Blankertz 1969).

Instead, to work against a one-sided predominance of experience and application, the instructors were supposed to receive improved educational training. But also increased schooling – while keeping distance to the demands at company level – was supposed to result in improved education. Accordingly, there was fierce debating on the Swiss Vocational Training Act of 1978: initiated by the trade unions, there was a nationwide referendum against this proposed legislation which was said to accept “cheap apprenticeships” or less demanding training at the expense of apprentices. Furthermore, the left-wing parties started a training workshop initiative

in the context of which vocational education was to be transferred at least partly into public hands (Tabin 1989, p. 135).

From this point of view, vocational education was considered a stabilising factor of social deprivation: it was said to lead not only into a qualification but also a social dead end. On the whole, one formulated an emancipatory claim which on the one hand aimed at the authoritarianism of instructors and on the other was supposed to result in increasing vocational and social autonomy of learners and wage-earners (Crusius et al. 1974).

In contrast to qualificational and social adjustment to company demands and the thus connected legitimation of the existing power relations, what was supposed to happen was education instead of vocational education in the service of the instructors.

Tacitly, the model this debate was oriented at was the grammar school or, even better as it was socially mixed, the comprehensive school, where not only selection started later but which was also said to be more capable of combining vocational and general knowledge. Thus, to improve the quality of vocational education the apprenticeship at the master craftsman was to be abandoned and school-oriented training workshops were to be established instead, as was the argument of part of the reformers in Switzerland (Tabin 1989), but also in Germany.

3.3 *From the Legitimacy to the Implementation Crisis*

According to the given quality matrix (Table 18.2), most of the measures dealing with input quality at the meso- and macro-level were started and implemented in those days. Apart from the debates at the systemic level, which resulted in pressure to reform vocational education, also the majority of facts supported a further reform of vocational education and its presentation as high-quality education. Until 1985 the number of apprentices in Switzerland was on the decline, whereas on the other hand the grammar schools were ever more popular.

A crucial and essential reform to stop the trend of a creeping loss of significance of vocational education followed in the 1990s, by creating the Federal Vocational Baccalaureate (Berufsmaturität as a vocation-related higher education entrance

Table 18.2 Multi-level/multi-dimension matrix on quality

Level/Dimension	Input quality	Process quality	Output quality
Micro level	Equipment of the learning environment	Recording and assessment of teaching and learning	Learning success, certificates, careers
Meso level	Infrastructure, curriculum	Guiding principles, QM measures	Graduates statistics, yearly accounts
Macro level	Laws and decrees	Standards, education reports	International comparisons, benchmarks

Source: Gonon (2008)

qualification) and the establishment of universities of applied sciences at the national level. This was an essential contribution to making the educational system as a whole more flexible and permeable, by allowing for the transition from vocational education to academic university education. Since the 1990s there have been a growing number of learners who, apart from vocational training, also acquired a vocation-related higher education entrance qualification. Apart from this, also the up to then rather fragmentary higher vocational education was reformed, newly located at the tertiary level and thus included into the structure of the educational system (Schmid and Gonon 2011). As an answer to historical and current concerns, since its creation in the 1880s the modernised system of vocational education has been constantly modified and reformed. The Canton laws at about the turn of the century were followed by the first vocational training act at the national level in 1930 which set appropriate standards for the organisation and implementation of vocational education. The explaining comments by the Swiss Bundesrat to this legislation referred explicitly to the particular significance of the quality work of the Swiss economy. This, it said, was decisively based on vocational training. Also lessons at a vocational school, which were now compulsory for apprentices, were said to rely on quality due to well trained teachers (Bundesblatt 1928, p. 8).

The change of vocational education since the 1970s becomes also obvious by the accelerating reform agenda. The sequence of reforms of vocational education was ever faster between the 1990s and the 2000s; this must at first be dealt with, they must be appropriately implemented and included into a regular structure. Partly, we observe an implementation jam: meanwhile educational decrees are so to speak permanently re-formulated and re-defined. Some react immediately to these changes, others react rather reluctantly or even belatedly, however. Furthermore, one might as well speak of a regional patchwork if one considers the different effects of individual offers and new structures: at some places they are very present, in other regions of Switzerland however, they are hardly existent. These considerable regional differences concern specifically the Federal Vocational Baccalaureate but also higher vocational education. Furthermore, the dynamics of reform and the permanent concern about quality assurance are stimulated from the outside: the European Qualifications Framework is another point of reference to which the Swiss system must adjust (Maurer and Gonon 2013). On the whole, concerning all these measures we may state different regional, branch-specific and vocation-specific speeds.

However, Switzerland's differentiated educational system does not prevent a shortage of skilled workers even there. Many demanded highly qualified and qualified workers cannot be recruited at home. From this diagnosis the results among other open issues, the question if the vocationalisation of education has not gone too far (Meyer 2009): after all, has academic education been neglected, resulting in a shortage of academics, as certain studies suggest (Schellenhauer et al. 2010). However, suitable candidates are lacking also for many qualified jobs if we believe the lamentations of employers. Furthermore, the above already mentioned threshold problem, that is starting vocational education, has gained in significance. Many young people do not find a suitable place in vocational basic training, whereas on

the other hand companies lament that they hardly find suitable learners. The transition regime, based on bridging offers, clearly indicates that within the (vocational) educational system there happen friction losses, i.e. needless standby times or that often transition proves to be rather problematic.

3.4 Hybridisation as a Contribution to the Quality of Vocational Education

Not only the number of reforms is an answer to quality concerns, but also the kind of reform and its topical content. In recent years the focus of vocational education has rather shifted towards general education. The vocation-related higher education entrance qualification has enforced hybridisation in so far as additional lessons of general education as an extension of previous lessons of general education in the context of vocational education rather lead towards further academic studies. This way not only access to the world of work is still guaranteed, also it is an option towards the university field. Thus, new training courses or study paths have been created, or vessels coming along with new rights. The vocation-related higher education entrance qualification is a crucial element, which on the one hand was supposed, by way of access to technical college, to make vocational education more attractive, while on the other hand increasing the quota of university graduates (Gonon 2013).

However – as so often in case of educational reform – this also created follow-up problems. The traditional gap (educational schism) between vocational education and grammar schools was not closed but so to speak newly hierarchized; for example in the commercial field the vocation-related higher education entrance qualification has developed into a variant for those young people who failed at grammar school or were not accepted there. As already mentioned, also this solution is regionally different, i.e. in Cantons with a high quota of grammar schools the vocation-related higher education entrance qualification is hardly found. Perhaps even weightier is the statement that new division lines within vocational education have been created, such as the difference of the Federal Vocational Baccalaureate as a higher education entrance qualification versus other forms of vocational education.

It is also criticized that vocational education has given way to the trend towards academisation, for this results in new inequalities and privileges within vocational education (Maurer and Gonon 2013).

On the one hand, the vocation-related higher education entrance qualification and other reforms giving more weight to general education and schooling in the context of vocational education have actually strengthened the latter's position within the educational system. On the other hand, many companies and parts of the economy are not at all happy that the learners are available for them only for restricted periods of time. Precisely these different points of view clash when it

comes to the question of extending and consolidating the measures, which are meant for increasing the quality of learners and their training.

4 Quality in the Context of Different Justification Concepts

One may also consider these measures for increasing the quality of vocational education at the various levels, from a sociological justification-related perspective. In the following, we would like to emphasize three fields, each of which being an important aspect of quality assurance in the field of vocational education. This depiction (Table 18.3) is inspired by Boltanski and Thévenot (2007) who, by their studies on ways of justification and spheres of value as well as the attribution of actors to these respective orders, for the analysis of social phenomena, also increasingly inspire studies in the educational field (Imdorf and Leemann 2012).

Vocational education – just like other fields of education – brings together a variety of interests and values, or these are related to each other by confrontational coexistence. The entire field of education, and thus also vocational education, has a civic task, which refers also professionally qualified individuals to the aspect of social autonomy, leading – e.g. at vocational school – to taking fields of legal and citizenship knowledge into consideration. Profession-related and practical skills, on the other hand, aim strongly at occupational efficiency and employability and are communicated most of all – though not exclusively – in the vocational subjects, furthermore also by way of external courses. The demand for personality development is an issue considered both at school and in the context of vocational training. We may identify specific actors for each issue, supporting these value systems. Basically, the representatives of employers and employees respectively are keepers of a value system that is that of industry and trade. Their demands must definitely be included into vocational education, otherwise the latter's quality would be very

Table 18.3 Justification-related concepts concerning the issue of quality in the context of vocational education – as vocational education presents itself

Values	Justification	Translation into curricula	Actors
Political world	Social autonomy	Citizenship and economic education (history)	National educational policy Teachers' associations
World of industry (and trade)	Occupational efficiency	On-the-job learning, vocational issues, natural sciences, computer application	Professional associations, Employers, Employees
	Employability, efficiency		
World of inspiration and personality development	Individual development, creativity & innovation	Mother tongue and society, languages (arts)	Parents Teachers' associations

Source: Gonon (2014)

doubtful. In the field of personality development, i.e. concerning issues of creativity and innovation, apart from the personal interests of the young people themselves also parents and – apart from teachers – also those deciding for vocational education are most of all in charge. The demand for citizenship as a political dimension again is predominantly held by actors at the national level and also by teacher's associations. A well organised system of vocational education will take all these demands into consideration and will achieve compromises between them.

In contrast to grammar schools, which are rather programmed for indirect professional orientation via the sciences and broad, though unspecific knowledge as the starting point for later professional integration, the focus of vocational education is on immediate professional and experience-guided orientation, on relatively clearly defined and specified activities. This is precisely why traditionally the main responsibility for training has been left to the companies. However, a constant scientification of vocations themselves results in increased pressure for extending the sciences as well as further educability in the context of the system of vocational education.

5 Quality and Re-definition of the Way of Understanding (Vocational) Education

The reform and relocation of vocational education in the context of measures for improving the latter's quality has also changed the way of understanding education in general. Vocational education – according to the definition of those actors as started it in Switzerland – developed independent of general education; it was primarily characterised by a state-supported and economically motivated intervention policy. This was then completed by further, e.g. social and citizenship issues. At the fore was at first its justification by the thus achieved trade-industrial benefit. However these days this quality feature that is securing sufficient qualification and closing qualification gaps, does no longer characterise vocational education only. The debate on skills shortage has also reached the grammar schools and thus the entire educational system. On the other hand, due to the desired connectivity to the university system, an increased connection to the sciences gains more weight also with vocational education. Demands meant to support creativity and innovativeness aim at the same direction.

Coming along with this is also a way of understanding education wanting to relate this concept more strongly to industrial reality and the dynamics of social change. Already at the beginning of the twentieth century several authors, John Dewey but also German educators like Georg Kerschensteiner, Eduard Spranger and Aloys Fischer, demanded education to be more strongly related to contemporary social and industrial reality. Dewey (and especially American pragmatism) assumed that usually the concept of culture was too narrow. Thus, not only literature and the best works of arts are elements of culture, but also the industry and the crafts. Thus, school and teaching must be oriented at practical tasks and current

issues. Instead of dividing general and vocational education, these two fields were to be considered integrative (Gonon 2009). Consequently, also Kerschensteiner spoke of no longer considering vocational education a less valuable field of education or a kind of special education but of considering it an integral element of humanistic education. The path of education, he said, was also much leading via life-practical tasks and active learning. By way of practical, action-oriented solutions, he said, one gains higher insights, new knowledge and solutions for problems (Gonon 2014).

It was, among others, also these attempts at conceptual revaluation, which were to provide vocational education with a new status and a new quality.

6 Conclusion: Quality as a Soft Power

For vocational education in Switzerland, the debate on and the way of dealing with quality doubts have resulted in a variety of running (and already implemented) reforms and have increased the legitimacy of vocational education. A number of different demands and values could be integrated into this system, mostly by promising improved quality. Meanwhile we must state that a kind of success story has happened, which can be read from a number of indicators: a low level of youth unemployment, on the whole a high level of training, but also the performance at international Work Skills competitions are not only internationally measurable entities and indicators but almost unanimously all involved actors emphasize them as indications of quality and success. From the point of view of the involved actors, the success quality is most of all due to the duality of the organisations of vocational education which is on the hand still based on the commitment of the companies and on the other hand also presents itself as a moderate kind of making vocational education more school-like. Basic education at company- and school-level, which should basically support each other, is considered a successful compromise between several demands. This was also meant to prevent any false alternative, which may be described e.g. as an uninhibited growth of the grammar schools or an academization of the entire educational system and society as a negative image. Such a successful model is based on achieving consensus, which characterises also many other political fields in Switzerland. This way the quality demand for vocational education becomes a common, cooperative issue of the involved actors. It is the quality discourse, which has essentially been characterising vocational education and its actors, most of all when it comes to the most recent reform attempts. By way of the quality concept the latter have been mobilised and appropriate reservations have been converged by compromise. In how far quality concerns will this way be dissipated in the long run, however, is a different question.

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Chapter 19

Addressing Mismatch in Spain: A Concern and Proposal Beyond the Economic Sphere

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Abstract In times of economic crisis, labour shortage and high youth unemployment, the attention is put on the relation between education, skills and labour market demand. This article acknowledges the need to assess this relation but claims that a more holistic picture is necessary rather than the one that is behind the attention put on work-based learning in the form of Vocational Education and Training (VET) in some countries. Contrarily, to the concern of current mismatch discourses centred on individual labour wages and national productivity, the paper proposes a human centred approach the Capability Approach (CA) to explore the reasons causing mismatch and the consequences to the individual. By combining documentary and field work research in a college in Spain, the paper posits the view that a capability perspective centred on individual freedoms can be a conceptual but also intrinsic important starting point for formulating an enabling VET which is responsive to the needs of the employers as well as is able to protect students from market imperfections.

1 Introduction

The seminal work focusing on the study of educational mismatch dates back to 1970s (Freeman 1976), when the concern in the United States about how much the state should be subsidizing education in order to have a competitive nation was arisen. Since then, using different methods and databases, several researchers have analysed the impact of education in one's human capital (Quintini 2011; Leuven and Oosterbeek 2011). Not too much has been advanced since then, and after the global financial meltdown, countries have focused on implementing fast remedies to alleviate the rise in unemployment at the lowest economic cost (Pilz 2012). Following the human capital principles as developed by Becker (1967) and Mincer (1972), human capital refers to the set of skills that increase one's productivity and

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therefore one's value in the marketplace. It is within this the neoliberal logic, that citizens are "reconfigured as productive economic entrepreneurs of their own lives" (Davies and Bansel 2007, p. 248). This logic eschews the human side and reinforces the false dichotomy between technical and liberal education whilst forgetting the moral aspects of preparation for work (Hyland 2014; Bloomer and James 2003). Indeed, the claim of this paper is that, in the current historical conjuncture, VET risks becoming entrapped within a continuation of reforms without questioning those principles and for avoiding this, it proposes alternative informational basis to re-imagining how a socially just VET could, and should, be like.

In the aftermath of the 2008 financial crisis references to one's human capital and one's responsibility to work are frequently articulated as matched or mismatched workers. Terms that are embedded in the references to youth unemployment and are encompassed within the employability discourse which is defined as "as a possible indicator of individuals' educational deficiencies" (Moreno-Mínguez 2013, p. 343). Mismatch is a terminology also used to denote failure to correspond, unsuitable, or incorrect as noted by the Cambridge Dictionary (2015). All terms that posit the weight of responsibility on the individual, or using Crespo and Serranos's words (2002) "turns social problems into personal problems" (p. 193). Employability, productivity or competitiveness are terms that have underpinned educational policy and that due to its narrow and economic view are not appropriate to be the sole ambition of educational and social policies. Holford and Spolar (2012) in their study about lifelong learning in Europe, remark that despite the inclusion of non-economic themes, these are the predominant ones when referring to the reasons for promoting VET. This master discourse of neo-liberal language of economic competitiveness (Dale and Robertson 2009), has been strengthened along the European recession, and, as this paper argues, the reason and hence, cause to be alert of the revival of work-based learning (McGrath 2012). The argument here is to propose a shift in the conception of VET thus moving away from traditional deficit accounts (Nussbaum 2011).

Additionally, this outcome-based discourse and concern on outputs has psychological effect. Within this logic, is where the impossibility of a significant part of young people in Europe, and particularly in Spain, to find a job is seen as an individual failure. And the discourse of mismatch is put as the result of consecutive bad educational choices. Whilst, mismatch is an economic problem, the paper analyses it from a human development perspective. Using the term of capability as a genuine opportunity as developed by Sen (1999, 2009), individual freedom is understood in the ability to pursue valuable choices for one and for others. Thus, being individual freedom the ultimate end of policies. On consequence, the issue presented here is not about measuring the level of education against the category of job performed (mismatch), but rather the job performed against the aspirations and career prospects of the individual and for doing it, it claims for widening the current educational informational basis.

The Informational Basis of the Judgment of Justice (IBJJ) as introduced by Sen (1990) moves from having skills, economics and the labour market as the sole end of policies to include aspirations and well-being as core-matters. On the field of

VET this shift on purposes opens up to a bigger debate about the role of this education to serve not only the market but at foremost the individual and a parallel one about whose stakeholders should be involved in the design of VET curriculum. Additionally, it provides a consequent reflexion about the effects of mismatch beyond economics. Addressing the issue of mismatch from a structural perspective evidences that current policies that are top-down elaborated and focused on the supply side, emphasize individual human capital and aggravate the sense of individual responsibility. An analysis that changes the heuristic frame of reference from economics to human well-being by introducing the concept of capabilities, puts attention on the consequences of mismatch for the economy but also for the individual as well as it is able to provide integrated solutions that go beyond “making VET more attractive” (Lasonen and Gordon 2008, p. 4). A broadening of the informational basis for VET policy making constitutes the opportunity to enquiry about the reasons of national inability to enhance opportunities for young people to live a life they have reason to value. Within this human development perspective, the role of VET moves from national productivity (Anderson 2010) to individual aspirations.

The CA provides the necessary frame for a political-philosophical basis for interdisciplinary research that presents a fresh alternative to current theoretical and empirical research approaches on mismatch and VET. The paper proceeds as follows. Section 2 presents a brief literature review of mismatch studies and the given role that VET has acquired as a core education for alleviating unemployment. Section 3 presents the theoretical framework of the CA and the contributions and challenges of using it as IJBB in a case study. Section 4, details the methods used during the empirical work in the case study of Spain, Sect. 5 shortly presents the operationalization of this human centred framework using three selected quotations, and Sect. 6 contains the main conclusions.

2 The Revival of VET Within the Crisis and the Underpinning Theoretical Assumptions Within the Mismatch Discourse – The Case of Spain

Whilst there is a strong relation between the rising number of youth unemployment across Europe and the promotion of VET (López Fogués 2012; McGrath 2012), the case of Spain serves here to illustrate the deficits of the same. With a rate of unemployment among young people who exceeds 40 % in Spain (INE 2014), the problem of unemployment is also tingled with the positions of those employed. In fact, although mismatch in Europe is said to be greater today than in the past (Blossfeld and Mills 2010), the particularity of Spain is double. On one hand, mismatch is more persistent because it tends to remain for longer time than in other OECD countries (OECD 2013); and on the other one, it affects every educational level as it is detailed below.

The demographics of education in Spain are in fact a particular because despite the low level of education achieved among the general population, young people favours university studies versus VET ones. In 2010, the share of university students among the population aged 25–34 was 39.2 %, the highest average in the EU during the period of 2000–2011 (Eurostat 2012). Parallel to having the highest number of university students, in 2010, 38.8 % of the population living in Spain aged 20–24 had only primary or lower secondary education (versus 23.4 % in the EU-15). In relation to the distribution of upper secondary students between general and vocational education, despite of an annual increase of 10 %, since 2011, only 42.9 % of young people chose this path (versus 49.6 % in the EU-27 average) (Eurostat 2012). This numbers illustrate how VET is a permanent second option.

If we compare these numbers with the level of unemployment, we conclude that in Spain mismatch has the tone of over-qualification and many young people are working below their level of qualification. In fact, regarding the levels of unemployment and educational level, if the total unemployment level (24 to 64 years old) was 24.2 % in 2014, accounting only those with primary education the unemployment increased to 38.6 %. Taking into consideration secondary education and Initial VET the level was 30.7 % and focusing in Upper Secondary VET and University degree it reduced to 15.1 % of unemployment (MECD 2014). The difference of the Spanish data with the EU-27 average is greater the higher the level of education, being 20 % the average EU level of unemployment accounting people with primary education, 10 % secondary, and 5 % tertiary education (Eurostat 2014).

Although it is difficult to distinguish from the data the VET students, the scenario that it presents is a country with the level of education polarized (many at the top and many at the bottom), as well as of general unemployment regardless of the educational level achieved. The presence of high levels of university graduates shows that individual efforts are not a necessary condition for employment and, that in some cases, qualification (contrarily to the human capital idea) can have a negative effect. This negative effect, in the case of Spain, can take two forms (within the complexity of it) that explain the raising number of University students as well as the migration flows. Firstly, it shows that the market does not adjust in itself, but rather employers favour higher degrees regardless of job specifications; and secondly, that the disequilibrium between qualification and salaries (which are subject to positions and demands for it rather than to individual qualifications) generates a group of highly qualified unemployed that are prone to migrate.

Labelled as the country “hardest hit with brain drain in western Europe” (Europe Press 2014), Spain has seen since 2008 a constant flow of migration of skilled workforce leaving the country. An effect that causes:

A damage in the public research and development (that) will be irreversible (...) leaving thousands of young researchers without professional perspective and seriously weakening the future of the Spanish economy. (Morel 2013)

A direct result of employers’ cherry-picking favouring higher-degrees and the lack of a supposed market auto-adjustment is that VET system in Spain is seen as an educational path without job-market exit whilst mismatch continues increasing.

Whilst no one disagrees with this phenomenon, reactions to how to tackle it continue using the human capital informational basis based on the idea of enhancing skills for increasing one's employability. Looking at three levels the results are the following ones.

First, at an academic level, research points to the existing mismatch as a common feature among southern European countries (Groot and Maassen 2000; ILO 2012; Kalfa and Piracha 2013; Lassibille et al. 2001; Quintini 2011) and as being an issue that represents

an economic problem (that) arises from its link with productivity and, in turn, its consequence on domestic wage inequality. (Kalfa and Piracha 2013, p. 1)

Second, at the policy level, the different communiques and EU strategies (European Commission 2002, 2010) emphasize the need to strengthen VET to increase national competitiveness and by doing so, social cohesion. And, third, at a national level, an emphasis on the strengthening the link between educational and the labour market and on shifting young people from university studies to VET is the dominant message. In fact educational VET reforms are being implemented that seek to stop VET from being a marginal option (Cedefop 2015; LOMCE 2013), and strengthen the apprenticeship period within a company (dual apprenticeship system) is on trial period in Spain (Lopez-Mayan and Nicodemo 2013). Consequently, one sees that at every level efforts are being done in order to improve VET systems, which are under constant pressure to adapt and to do so in order to adjust the educational and labour disarrangements (Nieuwenhuis and Shapiro 2004), whilst at the bottom one that would include employers' decisions, students' aspirations and even practitioners' challenges are being overlooked. Additionally to the VET pressure, by focusing on the success of the individual at the expense of the social, the rhetoric makes institutions invisible – their roles and the power of the structures – and ends up abetting politics of responsibility at the individual level (Sultana 2011). In fact, in an increasingly jobless society in which educational budgets are under threat, the promotion of VET as skills for growth, within a discourse of individual responsibility, is timely. And, additionally, as Wringe (1991) observed, it confuses work as an ultimate goal, whereas some kinds of work “are not constitutive of the good life and are at best a necessary evil” (p. 37).

3 A Capability Perspective: Mismatch Evaluated in Terms of Freedoms

In this exploratory paper it is the concern to reveal not the existing mismatch between individual skills and the job performed, but rather the narrow vision of mismatch and the relation of VET to it. In the case of Spain, a new educational law aims to tackle youth unemployment and disengagement to education (LOMCE 2013). Additionally to the high youth unemployment rates, since the onset of the economic crisis the number of young people aged 16 to 24 that are unemployed or inactive, and neither in education nor in training (NEET) has increased being almost 20 % (versus the 13 % of the OECD) (OECD 2013).

The new educational law aims to tackle this situation whilst reiterating an instrumental view of education:

The main difference of the Spanish educational system with others lies in the particularly low number of students in VET. This inevitably affects the employability and competitiveness of our economy, limiting the life choices of many young people. (LOMCE 2013, sec. XIII)

The consequences that a solely focus on skills able to be transformed into economic revenues has in terms of constituting a VET able to provide the necessary opportunities to realise a life one has reason to value (Sen 1990) is the concern for demanding a change on the informational basis.

Drawing on the CA as developed by Sen (1990, 1999, 2009), the space of capabilities is understood as “real opportunities” (Sen 1992, p. 40) versus former possibilities. A former opportunity is to pursue VET studies; however a real or genuine opportunity is that a person is able to choose her branch of studies freely without taking into consideration issues such as future job-opportunities, sex-role stereotypes, or the cost of this education. To take the capability, understood as freedom to, as the concept of analysis implies to evaluate not only the resources (e.g. number of VET branches or apprenticeships), nor the outcomes (e.g. number of students enrolled or doing an apprenticeship) but rather one’s ability and environmental and societal factors that make possible (or not) that an individual transform those into valuable outcomes. Using Robeyns (2005) illustration, the following figure (Fig. 19.1) shows how a capability is the combination of internal endowments and external conditions and that achievement under the CA is understood as a valuable outcome.

This human development approach emphasizes the need for a more holistic view of the variables affecting one’s decisions and the reasons behind choice. The IBJJ is proposed as an alternative to research educational mismatch which points to the contingent selection of data which is used bearing on mind the principle of justice embedded in democracy (Sen 1999, 2009). This conception of research based on democratic principles and on the basis of an equal space of capabilities for individuals, requires since the start that the problem of mismatch is discussed in a reflexive relationship between public policies and stakeholders. Within the CA, voice and the capability to exercise it (Bonvin 2006) is central in the developing of methodologies. The widening of the IBJJ implies two main things. First it widens the focus on

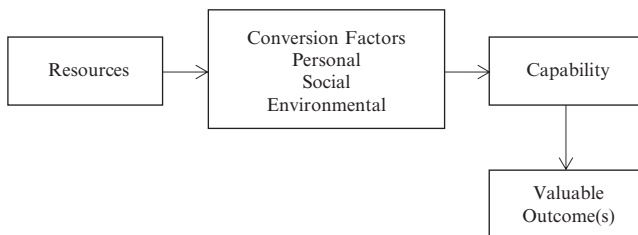


Fig. 19.1 The creation of capabilities, a simplified illustration (Source: author’s own compilation based on Robeyns 2005)

the policy fields of VET beyond employment to a more coherent perspective which takes more policy fields into account. Second, the IBBJ due to its human-development focus requires to be informed by a bottom-up perspective, which includes the engagement in terms of voice and aspirations of relevant stakeholders in order to constitute representative policies.

A focus on capabilities, in terms of freedoms to be able to be and to do (Sen 1999), in terms of being and doing something that is valuable for the individual as for instance being an administrative and being able to do tasks which the person finds fulfilling, allows re-questioning the purpose of researching mismatch and the direction of the actions to tackle it. It is not about the economic consequences of having the population over qualified, over skilled or even with a strong mismatch, but rather is about evaluating the individual and social impact for an individual to be unable to be and do what is valuable for her, as well as to try to interfere on the process that led to this situation.

Whilst the methodological challenges attached to the operationalization of the CA are extensively debated (see Clark 2005 for a review), the advancements in this from different fields including economics of education (Chiappero-Martinetti 2009) and VET (Lambert 2013; Powell and McGrath 2014) and the added value that this brings to the research, makes this paper confident about the need for widening the IBBJ for enhancing VET policy and evaluation.

Next, the paper presents three quotations from a bigger project that has been conducted from 2010 to 2014 in a VET College in Spain. The brief case study allows putting voice to the problem of mismatch and how it transcends the individual sphere. The voices correspond to a student, to a College coordinator and to an employer.

4 Methods

Two methods were used to assess the explicit and implicit values and goals of VET according to the three groups of stakeholders interviewed during 2010 and 2013. The first group was formed by VET practitioners, the second was represented by 15 students interviewed in two time-frames, and the third group of stakeholders identified included six employers from different industries responsible to train the students during 6 months as part of the mandatory curricula to obtain the VET certificate.

The participants were selected on the basis of accessibility and willingness to collaborate on the research. The selection of the College was made based on personal contacts and links that already existed due to my previous work. However, another factor that also affected the decision was the particular circumstances of the College. Located in the city of Valencia, Spain, it counts almost 2000 students per year and is considered a national reference centre for VET teaching and learning. Its uniqueness makes it representative of VET at its best, which I considered a twofold advantage. Firstly, in practical terms, the employees involved in the College were

most eager to participate, as were the students, who were accustomed to annual surveys and visits from people outside the College. Secondly, the fact of the College being considered a good one provided a greater challenge, in terms of exploring factors restricting students' capabilities. Consequently, access and activity patterns were, as suggested by Stake (1983, 1995), chosen as useful concepts for specifying the case study.

Regarding the methods I used semi-structured interviews of a duration of 30 min, preceded by a 10 min life-grid. The life-grid was a method used to obtaining a structured story in which the participant created a chronology of their life around the themes of family, education, participation, family and work (Abbas et al. 2013).

5 The Personal, Institutional and Labour Stories Behind Mismatch

The first quotation comes from Concepcion. She is a student of marketing who is doing the mandatory placement in a shop. Whilst the apprenticeship period is meant as a period for students to complete the acquisition of professional skills gained at school and to become familiar with the production processes, knowing and socio-professional organization comprising a workplace (Ley Orgánica 2006) her daily duties are selling handbags and hair complements. During the interview, she expresses her situation as it follows:

Concepcion: I don't have the money, they (the shop) don't pay me and I take the bus every day. The shop is fine but there was no need to study for that. I am a shop clerk. I don't speak English and here I have nothing, but I have my house, I am fine. Yes.

I: So, what is next?

Concepcion: Nothing. Home. They told me they like me but they don't have any money for me. Yep (Concepcion, 18, Spain, Marketing, 24/02/12).

The case of Concepcion is one among the many of the young people who were interviewed. Daily she takes a public transport to go to a work that instead of enhance her skills, motivation and willingness for joining the labour market is increasingly nurturing scepticism, anxiety and willingness to get out of the country. The strong mismatch (in terms of education and skills) is already present even in the period of training and her space of capabilities (in terms of changing to a better job, or to improve her language skills) are little due to the scarcity of job and to the lack of economic remuneration. This period of 6 months is part of the formal education and knowledge and experience is supposed to be the currency with which companies pay back the trainees. Thus, Concepcion situation is a common one. A situation in which companies seek to unfairly exploit a climate of shortage of employment to hopefully benefit from overeducated skills. Susaeta et al. (2013, p. 9) research the consequences of over qualification in Spain to conclude that "over qualification results in demotivation and frustration" as it is shown in the case of Concepcion who does not attach value to her activities. But more importantly, their research points out that

it results in unemployment, 35 percent of the surveyed companies stated that they prefer not to hire overqualified employees (because) the fear they will leave (Susaeta et al. 2013, p. 9),

whilst for the apprenticeships does not seem to be a problem. Additionally from this, one can conclude that 65 % of companies in Spain have, as habitual practice, to hire employees with the highest qualification regardless of the level of skills required for the job.

In conversation with the tutor coordinator of a College who is a practitioner responsible to allocate students into training places in order to instigate about the space of freedom to choose a company that the students enjoy, the answer he gives is:

It is numerically impossible; they (companies) cannot employ anyone. Companies close and there are more graduates every year. It is already a problem getting people placed for the in-company training module. They can get University students. (Placement coordinator, 25/02/12)

Henceforth, skills mismatch is a problem that originates since the moment of the apprenticeships, where students are lacking the capability to choose a valuable place for developing further skills. Whilst the financial crisis has severely affected the business landscapes, in a case of Spain where almost all the companies (99.88 %) are considered small or medium, the consequences have been drastic (Pyme 2013). In 2010 only 3,794 companies had more than 250 employees, posing a challenge to find enough enterprises able to assist and train VET students of which 55 % did not have a budget or planning for training and 21 % never assessed their future skill needs (Souto-Otero and Ure 2011). It reveals that the situation of mismatch entails a more complex problem beyond individual preparation or job correspondence. The thin Spanish industrial landscape combined with a lack of a culture and resources impedes that knowledge transfer occurs; hence, employee's mobility within a company is constrained.

The final quotation of Pau, a senior worker at an IT company, gives voice to the market demands in a tone that reveal that mismatch is beyond an individual problem:

We feel bad about it. We have people with years of experience and more studies than I do, but still we say 'no'. We do want young people with knowledge, but not many. It is sad; we can only hire a few people. Nothing compared with before. One needs to be extraordinary, and even being good, well, we had a student (last year) who was really good and we called a small company that sometimes works for us, so they hired him for a short time (Pause). I do not know where he is now. (Pau, IT tutor/employer, 06/05/11)

The three quotations express that work is a main concern and that mismatch is a constant in the Spanish scenario mainly featured by the lack of genuine opportunities among young people. All of the interviewees share a concern (and acknowledgement) about the limits to one's choices and educational level to influence. The three brief quotations here presented force to reformulate the question of mismatch from economic and individualistic terms to a more holistic one where aspirations, labour regulations and even VET objectives and hence evaluations are put into question. The quotations here expressed turn, in my opinion, the issue of mismatch from

being a personal one (problem of wage, problem of lack of education, problem of lack of skills) into a social and institutional one.

Why is Spain unable to provide capabilities to the qualified people even before they formally join the labour market?

An analysis that transcends the individual sphere reveals that what the government should face is not only the unbalance about educational paths, nor the destruction of jobs which the crisis had implicit, but the true devastating effect of a consecutive series of policies and reforms (i.e. the dual system) which does not take into consideration the quality of training being offered. It is within this three brief examples where it is presented that with a change of the informational basis from economics to individual well-being the biggest area to look at moves from being the individual to become the responsibility (and hence governmental duty to veil for it) of the Spanish market to create sustainable and valuable jobs. The last section presents some reflexions.

6 Some Conclusions

This paper was not designed to provide a solution to end mismatch, youth unemployment or to position and re-address VET in order to be given its deserved value. There are clear obstacles to attain this. The use of the CA as the methodological framework in which the IBJJ is formulated does not lead to an easy operationalization (Alkire 2008). However, an important point that this paper raises is that the current IBJJ for VET is insufficient and therefore, consequently, the discourses and reforms tackling mismatch and skills enhancement. In this context, the language of capabilities provides a space in which well-being is at the centre, reforms become dependent and VET and individual's responsibility to alleviate youth unemployment is reduced. In the case of Spain the relationship between education and labour integration is not one-dimensional but rather enormously complex (Dolado et al. 2000). Whilst in this paper the focus has been to unravel some of the complexities attached to the relationship by focusing on conversations with students, employers and practitioners, issues of gender, ethnic background or social mobility has been left aside for being work for a longer research.

At the present moment the Spanish government is reforming the educational system and VET within it, aiming to emulate those countries with strong dual training systems (i.e. Austria, Denmark and Germany). Though, this paper is sceptic about the results. It ends with four points of the process that are seen as a lack of the basics for an effective democracy in terms of IBJJ.

First, the process of reforms have been done apart from relevant parts and even with a strong opposition from trade unions, practitioners, students and parental associations who have not been consulted in any of the steps of the educational reforms. The notion that education (university and VET) should equip graduates with skills that match the demands of the labour market lies at the heart of strategies.

However, the discussion about that premise needs to be open to hear the different voices about what other stakeholders' value in VET.

Second, school-based education cannot be put as the only space where skills are to be learnt. Enterprises also have a critical role in this and hence, the efforts to activate a dual system in Spain are seen at first as positive. Nevertheless, one should ensure, that the dual system offers a decent and safe workplace learning where continuing training takes place and, at foremost, that this learning is not a camouflage for free-labour work where mismatches are a constant.

Third, the Spanish industrial landscape substantially differs from the countries where the dual system is applied. In Spain, the labour market is featured by companies with a small number of employees and little budget and experience in training. The quotation of the Placement Coordinator in relation to an increase difference between students seeking for companies and existing companies able to offer them a proper training explains the strong mismatched situation of the student Concepcion whose training ends up being unpaid work. A lack of training and investment that impedes the basic principle of upgrading of ones' skills once in the labour market, as it is meant under the human capital principle (López-Andreu and Verd 2013).

Fourth, the conceptual measurement of mismatch and overqualified has not been resolved nor sufficiently discussed, omitted variable bias such as country of origin, gender or even personal values and measurement error according to which method is being used are too serious to be ignored. Hence new contributions that move away from one's level of skills to reconsider social rigidities in shaping individual space of opportunities seem, to say the least, necessarily fostered if the area of VET aims to be genuinely promoted for ensuring a better chance for having a safe transition in which students have valuable jobs.

In conclusion, whilst the revival of VET and the emphasis on training is welcomed and knowledgeable to be necessary, the case of Spain illustrates that educational reforms need to be more inclusive and aware of embedded rigidities within the market for being more than a simple aesthetic solution.

The paper hopes to have argued that the current informational basis that emphasizes human capital formation and centres on promoting work-based learning to alleviate mismatch is insufficient to ensure a valuable VET and that by including the aspect of capabilities a richer analysis can be done. Using, Bonvin (2006), together with Galster (2010), focus on labour policies from a human development perspective, the conclusion is that a greater IBBJ in which dialogue to promote the awareness and involvement of businesses (most notably small and medium sized enterprises (SMEs)), practitioners and even students in forecasting future skills is needed to reconceptualise the role of VET to be played in relation to students' transitions and life-plans as well as to reflect the need to protect individuals from the labour market itself. The broadening of the discussion and contribution to the discourses that shape policy using a human development perspective is a preliminary step in that direction.

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Chapter 20

The Training Module Concept: A Way Towards Quality Improvement and Inclusion in German Vocational Education and Training (VET)?

Tim Grebe and Stefan Ekert

Abstract VET in Germany is based on a dual system (learning in vocational schools and companies) within regulated training occupations. It leads to a professional degree in the respective training occupation that is recognized countrywide. Traditionally, dual VET does not have a modularized structure. The German Federal Institute for Vocational Education and Training (BIBB) has recently developed competence-oriented training modules (“Ausbildungsbausteine”) for selected training occupations. These training modules have the aim of making learning outcomes more transparent and comparable, and of increasing the quality of qualification measures in prevocational training. The latter aims at easing transitions from these measures into regular (dual) VET. The training modules have been implemented in selected regions and qualification measures within JOBSTARTER CONNECT, a pilot programme funded by the Federal Government and the European Social Fund (ESF). This article summarizes the main findings of the external evaluation of the programme.

1 Introduction

VET in Germany is traditionally based on the so-called dual system (learning in vocational schools and companies) and is provided in the form of apprenticeships based on regulated training occupations. Currently, 327 training occupations (BIBB 2014, p. 9) are available, which are created and modernised in a standardized process involving social partners and other stakeholders (CEDEFOP 2012a for a more detailed description of the German VET system and its current challenges). Traditionally, VET leading to a recognized degree in one of these occupations lasts

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two to three and a half years and does not have a modularized structure. While there are indications about when and how long certain competences shall be trained and acquired in the respective training ordinances, they are no self-contained units and modules. Competence assessment normally takes place twice, once as a mid-term examination (after one to two years of training), once as a final examination at the end of VET. An official certificate is only issued once, namely after the successful participation in the final examination.

In addition to the regular system of VET there is a wide array of pre-vocational training formats. These are offered for school-leavers who do not find an apprenticeship after having obtained a school degree.¹ Provision of training for unsuccessful apprenticeship seekers is a phenomenon that varies in its size and scope, mainly depending on labour market and demographic developments (Neumann 2012). However, it is substantial in size. In 2011, 28 % of school leavers interested in VET entered some form of pre-vocational training (DESTATIS 2013).

During the years preceding the implementation of training modules, researchers and practitioners have criticized both the regular VET system and the system of pre-vocational training (Ekert 2013, p. 91). Criticism of the former has been due to the system's missing flexibility, e.g. the lack of options for switching from one training occupation to another or to complete VET after a period of work or other activities. The regular VET system has also been criticised for its inability to recognize prior qualifications obtained elsewhere.

The system of pre-vocational training has been criticised because participants of pre-vocational training normally have to undergo a full vocational training afterwards even though they have done occupation-related pre-vocational training or obtained practical work experience. This, in turn, is sometimes attributed to the fact that the contents taught in pre-vocational training are only remotely related to the contents of the regulated training occupations. The system has even been called a 'waiting loop' because many disadvantaged young person undergo several forms of pre-vocational training without necessarily improving their chances on the apprenticeship market (Ulrich 2008).

A system in which a regulated training occupation is structured by a number of self-contained, competence-oriented and certifiable modules which together represent the entirety of the respective training occupation, so the expectation of its advocates, could help solving both problems. It could help documenting partial qualifications of persons without a complete vocational degree and thus make it easier for these persons to complete their vocational training and obtain a full degree (OECD 2010, p. 27). Moreover, it could support transition from pre-vocational training into regular VET by better documenting competences acquired in pre-vocational training and by supporting a closer link between the contents of pre-vocational education and regular VET. Finally, advocates of modularisation expect that the definition of clearly defined and competence-oriented modules can increase

¹ Some of them are not able to start an apprenticeship altogether. Others cannot start an apprenticeship because the available (yet limited) spots are already distributed among better qualified school-leavers.

the quality of VET and pre-vocational training due to a clearer definition of the learning outcomes to be achieved in a certain phase of training and their relation to real work processes (Ekert 2013, pp. 88–97). However, as we discuss in more detail below, training modules have also been subject to substantial, and sometimes fierce, criticism.

To examine the potential benefits of training modules, the BIBB has developed competence-oriented training modules (“Ausbildungsbausteine”) for 14 training occupations. Modules for further training occupations are in the process of being developed.²

The developed training modules have been implemented in selected regions and qualification measures within JOBSTARTER CONNECT, a pilot programme funded by the Federal Government and the ESF. Within the programme, 40 projects have been active, the first starting in 2009. The programme has been evaluated externally.

This article summarises the debate about training modules and their potential benefit for the German VET system and some results of the evaluation. It is structured as follows: the next subsection explains the concept of training modules in more detail and provides some information about the arguments of proponents and opponents of modularisation. After that, we present some results from the external evaluation of JOBSTARTER CONNECT that can inform researchers and practitioners interested in designing or implementing modularized concepts in VET.

2 The Training Modules Concept

As mentioned before, the German VET system is traditionally based on a system closely following the occupational principle, i.e. a VET degree is earned if a dual apprenticeship is successfully completed. As mentioned above, this system was criticised both by practitioners and researchers.

The main starting point for the development of a broader approach towards developing training modules was the already mentioned report by Euler and Severing (2006), two renamed VET experts in Germany, who recommended the development and implementation of training modules with the aim to improve the permeability of the VET system. One of the key characteristics of their proposal was to develop modules that do not create a new system of vocational degrees, but rather take the existing training occupations as a basis.

The idea by Euler and Severing was taken up both by policy makers and VET experts as well as researchers. An intense debate about the pros and cons of training modules has taken place over the last years. This discussion must be seen in the context of the German VET system where the regulated training occupations are a

²“Ausbildungsbausteine” are not the first modularization concept that is examined in Germany. However, their development and piloting is more ample and systematic than previous, often regional, attempts.

constitutive element (Berufskonzept). Training occupations are often considered as an important element of quality assurance and as an instrument enabling apprentices to internalise an occupational identity (Pilz 2012 for a discussion of these elements). Many researchers and practitioners were reluctant to introduce a concept that – in their opinion – could undermine this well-established system and create a parallel system of partial qualifications. It must be stressed, however, that different authors have interpreted modularisation quite differently. While supporters stress that training modules are not aimed at replacing traditional VET and regulated training occupations but rather at modernising the system and increasing permeability between sub-systems and transparency of learning outcomes, others consider training modules as the first step towards an entirely modularised VET system undermining the incentive to complete a full apprenticeship, using micro-modules that are oriented towards the specific needs of individual training companies instead of the interests of the learner (Pilz 2005, 2009; Thelen and Busemeyer 2012 for summaries of this debate).

Of course, the debate was also influenced by developments on the international, especially the European level. In this context the concept of learning outcomes matters. As documented in CEDEFOP 2012b, developing training modules is seen as a way towards implementing the learning outcomes approach in several European countries. Finally, training modules are obviously well suited to support related efforts to implement a European credit system for vocational education and training (ECVET) in order to increase mobility and permeability of different parts of the VET systems in Europe.

Parallel to the on-going controversy, the “Innovation Circle on Vocational Education and Training”, an expert body instituted by the German Federal Ministry of Education and Research (BMBF), has recommended the piloting of training modules in a 2007 decision (BMBF 2007). In cooperation with social partners, 14 training occupations in different sectors were chosen to be part of the pilot initiative. The chosen training occupations represent a substantial part of VET in Germany since some of these occupations are among the most popular. Ekert (2013) estimates that the 14 occupations represent roughly one fourth of dual VET in Germany in terms of the number of apprenticeships. However, it was not planned to change VET in these occupations towards a modularized structure entirely. Rather, only in selected programmes and qualification measures, training modules have been implemented (see below).

The development of modules for these occupations was overseen by the BIBB. Guidelines for their development were (among others) the following (Frank and Grunwald 2008):

- Training modules must be developed among regulations for existing training occupations.
- Training modules must follow the “occupational principle”, i.e. a certification of single modules instead of the whole vocational training in a training occupation shall not occur; modules are rather instruments to structure the vocational training and define self-contained entities in a pedagogic meaning.

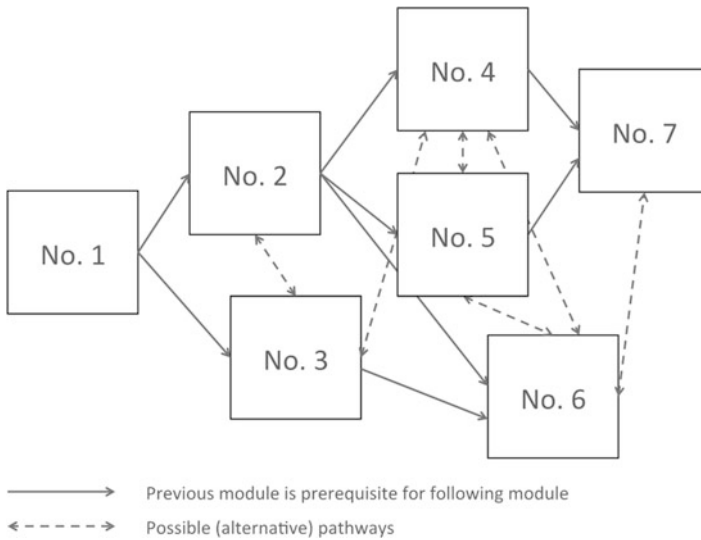


Fig. 20.1 Trajectory in a modularized training occupation (Source: author's own compilation based on BMBF 2008b, p. 9)

- Training modules must be based on learning outcomes, i.e. they describe the competencies to be acquired and not the input in terms of what a person studies or what is taught.
- Training modules must reflect the model of complete action and follow the principle of professional acting competency, i.e. they must describe realistic and typical processes in the respective training occupation and define learning outcomes in relation to these processes. Moreover, the described processes must be similar to those described in the regulation of the underlying training occupation.

The concept is aligned with the definition of competency in the learning field concept of the German Conference of the Ministers of Education and Cultural Affairs (KMK) (KMK 2007; Ekert et al. 2012). Competencies are defined to be the potential of a person to deal with the objective, social and personal requirements within the fields of work of an occupation. The developed modules for 14 training occupations were, despite their adherence to the aforementioned guidelines, rather heterogeneous across training occupations. Their length varies between eight weeks and one year. There are occupations split up in no more than four (all mandatory) modules, in others there are up to 25, many of them being optional. Accordingly, the scope of competencies to be acquired in one module is rather heterogeneous. This heterogeneity may be attributed to the fact that the definition of modules has been happening in a process involving social partners, with different institutions (unions as well as employers associations) having different views about modularization and approaches in VET generally.

One commonality of all sets of training modules is that they permit different trajectories. Figure 20.1 shows that in this exemplary training occupation

(Anlagenmechaniker/plant mechanic) it is mandatory to start with module 1, which is the case in all modularised occupations. After that, different trajectories are possible, but some modules must be completed before others can begin (Fig. 20.1). In the shown occupation, there are no optional modules, so all modules have to be completed before a final examination can take place. The duration of all modules together is equal to the duration of the regular duration of an apprenticeship in the training occupation, which is the case for all 14 modularised training occupations.

According to the guidelines excluding formal certification of modules, recommendations for competence assessment and documentation at the end of each module are intentionally missing. The BMBF only recommends that:

After a person has completed a training module, the acquired competencies and learning outcomes shall be documented in a suitable manner. (BMBF 2008a, 'authors' own translation')

3 The Pilot Programme JOBSTARTER CONNECT

In order to obtain practical experience and derive recommendations for the future use of training modules, the pilot programme JOBSTARTER CONNECT has been launched in 2008, funded by BMBF together with the ESF and implemented and supervised by BIBB. Institutions in the field of adult education (such as vocational schools, private for-profit and non-profit education providers in the field of pre-vocational training, etc.) could receive funding for a maximum duration of 5 years in order to implement training modules in their qualifications. The goal of the programme according to the funding authority, BMBF (BMBF 2008a, 2009), was to:

- Improve the transition of young persons who have been unsuccessfully seeking an apprenticeship into regular (dual) VET,
- Generally increase the permeability between different parts of the VET system,
- Increase the orientation of extra-company training towards regular (dual) training occupations,
- Improve the recognition of prior learning for regular VET and to improve pathways for obtaining a vocational degree in stepwise qualification procedures.

In the second round of funding, another goal was added, namely to:

- Define and document the competencies relevant for vocational education.

The latter was a direct result from the fact that without any specified guidelines for competence assessment, the methods employed by projects varied widely in their scope and validity. Apart from these (rather general) guidelines, little rules or guidelines were provided in terms of how the piloting shall be implemented.

Altogether, 40 projects were funded since 2009 in the following fields of action:

- Qualification of young persons who were unsuccessfully seeking vocational training for more than 12 months,
- Qualification of disadvantaged young persons at the link between special pre-vocational education and regular VET,
- School-based vocational education in different short- and full-time programmes,
- Second-chance qualification for semi-skilled and unskilled workers.

In most projects, one of the primary aims was to integrate participants into regular (dual) VET after some months of extra-company VET or pre-vocational training.

Most of the projects aimed at implementing the training modules concept within qualification programmes that involve several partners, such as companies, vocational education providers and vocational schools. Most projects have concentrated on selected occupations or selected pre-vocational training or VET formats.

4 Results from the External Evaluation

Since the main aim of the programme was to gather experiences with training modules, accompanying research and monitoring were implemented. This was carried out by BIBB. An external evaluation carried out, among others, by the authors of this paper, has been operative between 2010 and 2014. This paper draws primarily on findings from this evaluation.³

The main goal of the evaluation was to assess whether the programme goals stated in the previous section have been reached and why this has (not) happened.

4.1 Methodology of the Evaluation

The external evaluation was an integral part of BIBB's concept for structuring and systematizing the results from the piloting. The evaluation was carried out by InterVal, a private research and consulting company with no links to either BIBB or the funding ministry BMBF. It has used a mix of quantitative and qualitative methods. Its character has been formative and, to an increasing degree over time, summative. The formative part involved discussing preliminary findings with both BIBB and the individual projects and in conducting several formative workshops. In the workshops, different topics such as methods for valid competence assessment, were discussed between the evaluation and the project. Evaluators have taken the role of facilitators in the workshops instead of giving clear recommendations,

³This paper can only provide a small selection of the evaluation's findings. For more reports, the interested reader is referred to www.interval-berlin.de, where the relevant reports (see the overview in Ekert and Grebe 2014) can be found.

because the open character of the programme could be best supported by such an approach. The external evaluation builds on

- An analysis of the monitoring data gathered throughout the piloting documenting qualification processes and transitions after participating in modularized training for 4,362 participants,
- Case studies in 36 of the 40 projects, some of them repeated in order to analyse sustainability of the use of training modules,
- Surveys among training participants, education providers, schools and involved companies, some of them repeated,
- Analysis of the literature on modularization concepts in vocational education and interviews with VET experts,
- Results from discussions with projects and VET experts during the workshops.

As can be seen from the sources, the evaluation can draw from qualitative and quantitative findings from several sources, allowing it to compare different views on single phenomena (triangulation). For more details on the methodology (Ekert and Grebe 2014).

4.2 Results from the Implementation Analysis

The following results have been derived from case studies and surveys among education providers and companies that have, either directly or indirectly, participated in the programme.

As mentioned before, 40 projects have been supported within the programme. The project managing institutions were primarily private education providers, but also business and crafts chambers and some public authorities. In all cases, these institutions were the nucleus of a regional network of schools, companies and other education providers that were willing to take part in the piloting.

The implementation of training modules has been found to be very heterogeneous across education providers and training formats. Some education providers have implemented a modularised structure in many of their qualification measures, others have taken part in the piloting only with selected courses or qualifications. The training formats, all of which are normally publicly financed, can be differentiated into three categories:

- Pre-vocational training, taking part either in the form of school-based training or firm-based training or in a format involving education providers and firms. This format is aimed at preparing for vocational training while achieving a first occupation-related qualification. These formats are primarily aimed at school-leavers that are not deemed ready for dual VET because of individual problems or lack of certain competencies. Many pre-vocational training formats have a duration of up to one year.

Table 20.1 Number of participants in JOBSTARTER CONNECT

Pre-vocational training	Assisted vocational training	Second-chance qualification
2249	1616	497

Source: author's own compilation

- Assisted vocational training, taking part either in the form of school-based training, company-based training with accompaniment by an education provider or in programmes combining extra-company training by an education provider with internships in a company. These formats are aimed at different target groups, especially young persons that have been unable to find a dual apprenticeship or have other problems requiring assistance during VET. The maximum duration of these programmes varies, depending on the training occupation, between two and three years. Some of the programmes aim at a transition into dual VET after some months of participation.
- Second-chance vocational training, aimed at adults without a formal vocational degree. This format leads either to a partial qualification that supports these adults in re-entering the labour market or to a full vocational degree. Their duration varies between some months and two years.

All of these training formats have in common that participants normally do not assign themselves to a qualification measure. Their participation is normally result of some counselling provided by the Federal Employment Agency, the secondary schools (especially when participants are school leavers) or other public institutions. The cost of participation is normally borne by either the Federal Employment Agency or some other public authority in charge of supporting labour market integration.

Within JOBSTARTER CONNECT, the first type (pre-vocational training) has been implemented most frequently, followed by vocational education and second-chance qualification. Table 20.1 shows the respective numbers of participants over the course of the evaluation monitoring.

The described formats are not directly equivalent to the fields of action within the programme that are listed above. This is due to the fact that the description of fields of action mixes target groups (such as person's unsuccessfully seeking vocational training for more than 12 months) with types of qualifications (such as school-based vocational education). However, the description of programme results by the types of qualifications as listed before has proved to be useful because of some specific challenges in each of the types.

A second, and almost equally important way to structure the different environments in which piloting has been done, is the institutions in which the training takes place. Broadly, there are formats where companies play the major role (even if training in the company is accompanied by some education provider that helps the participant and the firm design suitable training and resolve difficulties), others where public schools are central, and others where (mostly private) education providers are in charge of the qualification process. The fact that schools and education providers are often the main institutions responsible for the implementation of the

training process does not mean that companies are not involved at all. In 83 % of the qualifications in JOBSTARTER CONNECT, some training in companies has been part of the curriculum – however, the scope of this in-company training varies widely, between several months and short internships of only a couple of weeks. More generally, almost all of the 40 pilot projects have faced the challenge to coordinate the implementation of training modules in different learning environments. Almost all qualification formats involve different institutions in the qualification process.

All types of qualifications in JOBSTARTER CONNECT have in common that they are aimed at persons disadvantaged on the labour market. Based on some socio-demographic indicators, it can be concluded that the programme has been generally successful in reaching these target groups. Among other results, it has been shown in the evaluation that:

- More than 11 % of programme participants had not acquired a secondary school degree at the beginning of their modularized training, compared to two percent among all VET participants when they start their training.
- Approximately 64 % of participants had only the lowest available secondary school degree and only 24 % had some higher degree, compared to 29 % and 68 %, respectively, among VET beginners in general.⁴

However, it must be mentioned that these characteristics are not unique to modularised training; they are rather due to the training formats that have been modularised. For instance, no substantial differences could be found between the characteristics of participants in non-modularized pre-vocational training and pre-vocational training within JOBSTARTER CONNECT.

The characteristics of the participants are an important factor for the implementation, because education providers, schools and companies did not only have to master the task of implementing a new curricular and pedagogic instrument. They also had to face the challenge of implementing training modules in qualification formats with a group of participants where certain social problems are more frequent than in regular VET.

Nonetheless, the experience of the 40 pilot projects has been more frequently positive than negative, although implementing training modules often means changing curricula, teaching methods and organisation of qualification measures. Substantial challenges have been encountered, but often overcome during the piloting. A successful implementation was found to be highly dependent on the framework conditions. The main conclusions from the implementation analysis can be summarized as follows:

- Implementing training modules in pre-vocational or vocational training offered by education providers can be successful if and only if the concept of training modules is accepted by the trainers and by the management of the education

⁴Comparison values for all VET participants have been taken from the official statistics available at www.bibb.de/dazubi and refer to 2013.

provider. Moreover, the concept of competence-orientation in vocational training must be understood and implemented (it is not a new concept but in many cases it has not been systematically implemented). This has been the case in most projects and is the reason for the finding that implementation has been particularly thorough in cases where education providers are responsible for the entire qualification process and where most of the training actually happens under the authority of an education provider without substantial involvement of companies and public schools. The reason for the relatively high motivation among training providers is not only that they could receive a grant within JOBSTARTER CONNECT. There has also been intrinsic motivation stemming from the aim of following recent trends in pedagogy. There was also extrinsic motivation due to the pressure (exerted by regional politicians, the employment agencies and other institutions) to constantly improve and modernize qualification programmes.

- Some of the pre-vocational training formats in Germany are based entirely or to a large part on training within companies (such as the so-called Entry Qualification (EQ) a programme that mainly consists of subsidised long-term internships for disadvantaged school leavers in private companies). EQ and similar formats (especially within the piloting) normally involve some role of an education provider but this role is limited, often to socio-pedagogic support of the participants. Projects within JOBSTARTER CONNECT implemented by these education providers have faced the major challenge of convincing companies, often small and medium-sized enterprises (SMEs), about the usefulness of a new curricular concept. This has proved difficult especially because trainers in SMEs normally do not have a pedagogic qualification. They are experts in the craft or the trade they teach apprentices, but they are normally not familiar with pedagogic concepts like outcome orientation. This has led to general skepticism, aggravated by the fact that modularization involves a more *precise* planning of the qualification process, making it difficult to teach certain things “when they arise”, e.g. due to a customer order or an assignment. The evaluation has also found that, even in cases where companies had agreed to participate, the implementation of training modules has often been less rigorous than in training implemented by education providers.
- The success in implementing training modules in vocational schools⁵ has been largely dependent on the role of the schools. In cases where school supervising authorities have been the drivers of applying for funding within JOBSTARTER CONNECT, implementation has often been more successful than in constellations without political support. However, even in successful projects, there has been substantial reluctance and, sometimes, open resistance. In the qualitative

⁵In Germany, vocational schools are specialized institutions that normally provide the school-based training within traditional (dual) VET. They also frequently offer state-sponsored programmes in the fields of pre-vocational training or cooperate with education providers to provide extra-company VET. In Germany’s federal structure, vocational schools are subject to legislature of the 16 states, creating (especially outside of federally regulated dual VET) a very heterogeneous landscape of qualification programmes offered.

interviews within the evaluation, it could be found that teachers and school managers were often opposed to a modularized structure and principles like outcome orientation because they doubted that such pedagogic principles were suitable for the target group of their qualification programmes. Others, however, embraced the idea and concluded that creating more realistic and work-based tasks can even improve motivation and performance of students.

- In cases where vocational schools or the school-supervising authorities have not been the drivers of the piloting but where vocational schools have rather been approached by education providers taking part in the programme, success has been limited. Often, school principals claimed that participation was not possible because a modularized structure was at odds with other rules and regulations they had to follow and for which they were not responsible. Within the evaluation, it could not always be determined whether these objections were based on real legal difficulties or rather due to reluctance towards the concept.

The results and experiences of the pilot projects do not only vary between the types of implementing institutions (as described before), but also on the type of training, in which modules have been implemented. Specific problems arise when training modules are implemented in types of training that have a length of one year or less:

- Implementing training modules in pre-vocational training can only be successful if the length of the training module(s) to be used is substantially lower than the length of the training. This is because pre-vocational training often involves other steps than teaching occupation-related topics. For example, participants get support in choosing a suitable occupation, obtaining a general school degree or receive training in writing job applications. Moreover, participants of pre-vocational training often have problems in mastering basic competencies. This means that sometimes, more than the regular duration of a training module would be required to teach it thoroughly. Some training modules have a length of one year, which is therefore incompatible with pre-vocational training.
- Similar limitations apply to second-chance qualification. Larger training modules are often not well suited to the training needs of participants who need training in very specific areas that are not well captured by the (larger) modules.

Problems that relate to specific target groups and their training needs as well as the training formats designed for them do not mean that the training modules concept is not suitable for disadvantaged groups on the labour market. It only shows that the duration of the modules and the individual support provided to participants must be adapted to their requirements.

4.3 Results on Competence Assessment and Documentation

One of the main motivators for implementing training modules is to ease transition from extra-company pre-vocational and assisted vocational training into regular (dual) VET by making competencies acquired more transparent. Of course, this

requires some documentation of the competencies acquired during modularized training. This, in turn, raises the question how these competencies shall be assessed in order to provide valid results. Within and around the programme JOBSTARTER CONNECT, there has been substantial debate about what this requirement implies. This debate was partly due to the above mentioned fact that the programme itself has not provided any guidelines on how to assess and document acquired competencies at the end of a training module.

Some of the projects, especially in the early stages of the programme, have issued certificates to their participants describing the outcomes of the respective training modules and the fact that the participant has gone through that training while refraining from documenting their competence assessment procedure. Others have referred to ongoing competence assessment during the qualification process without precisely describing their methods.

Many projects in the later stages of the programme have formulated a need to set standards for competence assessment after each module, especially in order to increase validity (and thus recognition) of modules certificates. One group of projects has derived written standards for competence assessment that have been subsequently put to test by most projects (Dymel 2013 for a description of these standards). The main points in these standards are:

- Competence assessment should be implemented at the end of each training module and should follow a standardized procedure in order to ensure comparability.
- Different types of tasks and exercises such as discussions, role play, and simulated work tasks should be used. They should be as realistic as possible and close to tasks in real work environments. The guiding principle should be to design complex action situations related to a case-oriented task. Problems and questions are furthermore to be designed among the principle of complete action, that is they shall not require knowledge of only specific, theoretical or partial aspect but shall rather test the competency to act in a complex situation, i.e. to solve the problem independently and creatively.
- At least two persons should implement competence assessment, at least one of whom should be a certified vocational trainer.
- The documentation of each training module and all issued certificates should list the criteria and principles that are used in the competence assessment as well as their weighting and the respective minimum thresholds for passing.

All projects have been asked to test the implementation of these rules during the final year of the evaluation. The results have been inconclusive. Most projects have reported positive experiences from the implementation itself. The effect of adhering to the standards, however, could not be measured because implementation of these rules has happened rather late in the process of piloting. Also, as we discuss later, modules certificates are unknown to many companies at present, making it obvious that the standards in competence assessment must be explained to companies individually if they shall have an effect. Another problem is that competence assessment is often carried out by personnel of the education provider also implementing the

modularised training. This may reduce uniformity of requirements and external validity. We must therefore conclude that more research is needed in order to assess the impact of more rigorous competence assessment, although one may find the above mentioned criteria intuitively appealing.

4.4 Results on Transitions into VET and Work, Completion of Vocational Degrees

Derived from the main problems in the pre-vocational system and in VET in general (as described at the beginning of the chapter), there are important criteria for judging the training modules' possible effect on the programme participants. First, a modularized structure should improve motivation and establish a feedback culture, giving participants more control of their qualification process and thus empower them for further steps. Second, occupation-related qualifications must be imparted and properly documented so that they improve transition rates from modularized qualifications to regular (dual) VET or into work.

The evaluation has produced encouraging data on the first point. In qualitative interviews as well as in a standardized survey among 676 programme participants, aspects like provision of regular feedback, a culture permitting mistakes, and the existence of an environment where one learns to work independently and freely have been praised. For assisted vocational training within JOBSTARTER CONNECT, the results can be compared to those from a survey using the same questions among participants of non-modularized assisted and regular VET in some categories (Ekert et al. 2014, pp. 57–59). It can be shown that in some categories, programme participants' ratings are significantly more positive.

Concerning the second effect, and especially transition rates, results are less clear. First, it should be reported that in almost all projects, acquired modules were documented, describing the acquired competencies and clearly stating the module and the relating training occupation. However, surveys among projects have often shown that firms in the region are not aware of what the concept of training modules is and what certified modules exactly mean. This is partly due to the concept being new, but also to the fact that modules are certified by the education providers themselves, and not by an external institutions like a business or crafts chamber, as is the case in regular VET.

Second, transition rates in pre-vocational training and assisted vocational training vary between training formats. For example, two of the rather popular formats, the EQ and the Prevocational Education Scheme (BvB) have been known to yield quite different rates of transition into regular VET after participation. Therefore, to assess the possible effects of module certificates one has to compare transition rates of the modularized format to the non-modularized format of, say, EQ or BvB.

To do this, sufficient numbers of participants are needed as well as data on transition rates both within JOBSTARTER CONNECT and outside of it. This is only the

Table 20.2 Transition rates in- and outside of the programme

Qualification format	Transition rates for programme participants		Transition rates into dual VET outside of the programme (%)
	Transition rate into dual VET for all participants (%)	Transition rate into dual VET for participants with known transition (%)	
BvB (N = 694 in the programme)	36	45	34–35
EQ (N = 446 in the programme)	58	70	56–60

Source: author's own compilation based on Ekert and Grebe 2014, p. 54

case for the two aforementioned formats of pre-vocational education and not for other formats that have been included in the piloting. The results for non-modularized BvB and EQ could both be taken from a single study analysing these measures, which improves comparability (Popp et al. 2012). The results are shown in Table 20.2. They indicate that positive effects of modularized qualifications seem likely (among those with a known transition, the rates of integration into regular VET are larger than outside JOBSTARTER CONNECT), but cannot be proven beyond doubt due to a large share of unknown transitions. Additionally, two factors impede comparability:

- The form of measurement is different between JOBSTARTER CONNECT and other programmes. Results in JOBSTARTER CONNECT are derived using polls of former participants done by participating education providers, other evaluations (such as EQ and BvB) have used telephone interviews some months after the end of participation, implemented by the evaluation.
- The rate of participants with unknown transition is large in JOBSTARTER CONNECT. This also holds for other programmes as well but the exact rate of unknown transitions is not known for many evaluations – technically, only a small share of former participants are called for the poll and there are large shares of persons who do not respond.
- For the case of EQ, one must also note that within JOBSTARTER CONNECT, all EQs have been assisted (by an education provider) while outside of it, not all EQ are. This may have led to a more intense coaching of participants compared to EQ participants outside of the programme.

When transition into regular (dual) VET happens, the question arises whether certified training modules lead to an increased rate of recognition of prior learning, in the form that VET is shortened compared to its regular duration. Such a shortening is not unusual in German VET if prior qualifications or higher school degrees justify it. Especially in the case of EQ, recognition rates can be compared between modularized EQ within the programme and data on EQ in general. It was found that rates of recognition are indeed substantially higher after modularised VET (37 percent instead of 23 percent). Although an effect of modularisation seems likely here, the same remarks as above apply.

Besides the main aim of transition into regular (dual) VET it must also be considered a success if participants of modularized qualification acquire all necessary modules to obtain a full vocational degree without prior transition into dual VET. This has been the case for 13.7 % of the participants, with especially high rates in assisted VET (up to 65 %). Unfortunately, these rates cannot be compared to assist VET outside of the programme because to the best of our knowledge, no data is available.

Finally, one of the main concerns of opponents of modularization is that participants go to work with their partial qualifications instead of continuing training towards a full vocational degree. We find no evidence for such an effect. Only five percent of participants who have successfully obtained at least one module certificate have made a transition into work after their qualification. Unfortunately, no data is available about the nature of work which participants have taken up. But altogether, this is not an alarmingly high rate in comparison to data from other evaluations (the rate is eight to nine percent in EQ and seven to eight percent in BvB; for other formats, no data is available). It must also be considered that transition into work is a normal and encouraged transition in second-chance qualification where besides the completion of a vocational degree the re-integration into work is one of the primary goals.

5 Conclusion

It could be observed that the aims of increasing the quality of pre-vocational training by making it more outcome- and work-oriented and by linking the contents of pre-vocational training more closely to the contents of regular VET, can be achieved. The same is true for the general goal of making learning outcomes more transparent. In many cases, the implementation of training modules has triggered and supported such improvements. However, such results could be observed only in settings where the training modules concept was accepted by the training staff and where implementation was actively supported by the project managing institution. In these settings, curricula have often been changed substantially and new didactic principles have been applied. The requirement of assessing competencies at the end of each module has improved feedback loops between trainers and participants. More generally, training modules are well aligned with the move towards making learning outcomes more transparent on the European level (as manifested in the European Qualifications Framework (EQF) and ECVET).

It was also found, however, that more work-oriented pre-vocational qualification, increased transparency of learning outcomes and improved comparability between contents of pre-vocational training and extra company VET to regular (dual) VET do not automatically lead to improved transition rates from pre-vocational training into regular VET or from extra-company training to dual VET. However, these findings must be considered preliminary due to the low number of observations on which they are based and the often found lack of comparative data from non-

modularized qualifications. It can be concluded from qualitative evidence that one factor impeding transitions and leading to the low level of recognition of certified training modules is that they have not attained a sufficient systematic relevance, including awareness by companies and business associations as well as training providers, vocational schools and other relevant institutions.

We can finally provide preliminary evidence that one concern among critics of the concept may not be justified. Several researchers had voiced concern that implementing a modular structure in German VET could increase the number of persons who seek work without a formal vocational degree, using the training modules certificates as proof of their competencies. We neither find alarmingly high rates of transition from modularized qualifications into work nor do we observe a high rate of participants in modular VET who actively seek work before the completion of their regular vocational degree ('drop outs').

However, the debate will continue and further (empirical) research will be needed. Our findings about transition rates and drop outs must be seen in the context of the preliminary nature of training modules and their non-official status. Whether an official system of training modules would be able to improve transition rates from pre-vocational training into VET and whether it may lead to a higher number of drop-outs from regular VET or pre-vocational training, as some critics suggest, is an unanswered question. Our findings suggest, however, that by closely linking training modules to the underlying training occupations (thus keeping the occupational principle intact) and by implementing training modules primarily in pre-vocational and extra-company training, the possible pitfalls may be smaller than the benefits of increased transparency and permeability between different parts of the VET system.

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Chapter 21

Business and Administration Occupations – Findings About Differences and Similarities in Their Requirements and Mentalities

Franz Kaiser, Silvia Annen, and Michael Tiemann

Abstract In Germany, a change in the economic structure happened similar to nearly all western economically highly developed industrial nations: A growth of the service sector and a decrease in the production sector. Due to the increasing number of business and administrative occupations in Germany, Austria and Switzerland as well as to demographic developments, a discussion has emerged about how many different occupations and training regulations are needed in this field.

The paper is based on findings of a research project at the German Federal Institute of Vocational Education and Training (BIBB). To find similarities and differences of these occupations, we used a broad methodological approach during a four-year project. This approach included a detailed qualitative analysis of all the training regulations and curricula for the training part in schools, an employee survey, a historical and sociological study, and a comparative study of German-speaking countries.

Our project revealed that the similarities between these occupations clearly outweigh the differences, with nearly all of them having in common controlling, accounting and commercial management, as well as processing information and communication with clients. On the other hand, though, a detailed analysis also showed a number of differences, such as the particular mentalities and competences in the various vocational branches. Based on the similarities between qualifications and on the findings of the comparative study, we suggest developing key curricula for all business and administration occupations. They would give qualified skilled workers more opportunities in the labour market and help to recognize the outcome of VET-based training for university degrees. Finally, a more critical look at the

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bundle of qualifications in those occupations opens a lack of ethical reflections concerning the way things happen in the economic business.

1 Merchants, Business and Administration Employees in a Historical, Sociological and Economical Perspective

Considering the fact that an occupation is more than a bundle of qualifications and that the development of curricula has to integrate knowledge about the special mentality and history of the occupation on the one hand and the branch which the work is linked to on the other hand (Rauner 2007), the project took a closer look at the history and sociology of merchants and business and administration employees.

In the early years of the Egyptian, Greek and Roman societies merchants as a part of economic life can be found. The transport of goods from the place of production to the place of consumption was their main function for the society. Hence in national-economic models of Marx, Ricardo or Smith they were located in the field of distribution (Brötz and Kaiser 2015). They needed to have knowledge about transport, trading traditions, negotiations and regulations at different places and the prices you achieve for the goods at the various markets. In the early years there was no need for difficult calculations, no need for writing and reading and no need for documentation (Reinisch 2011). The rising demand of qualifications for merchants started parallel to the emergence of cities and nations. They extended the range of their trading activities, so the number of their offices and employees increased in the fifteenth century.

From that moment on they had to communicate with their business partners in foreign cities to know which goods in which kind of quality were needed there, what were the best transportation routes and which documents were needed. They also started to calculate the time and costs of transport and storage and they tried to get familiar with different cultural traditions (Fig. 21.1).

These developments had three main effects:

- The merchants got more and more in touch with the rich, the nobility, because of dealing with them and lending them money. Thus, their own status improved from a despised occupation to an occupation with increased political influence. They held seats in city councils and could thus influence regulations such as market days, tolls and so on.
- The fields of trading became more and more specialized, not only concerning the goods. There were specialized merchants for assurance, banking, transport, and later for investments in buildings and industrial production (only 150 years ago).
- The increasing complexity of the business, knowledge of different languages, transportation routes and cultures generated a rising demand of qualifications to be successful in 'globalised markets'. Specialised academies were founded in the nineteenth century (1898: Leipzig and in Switzerland in the same year St. Gallen).

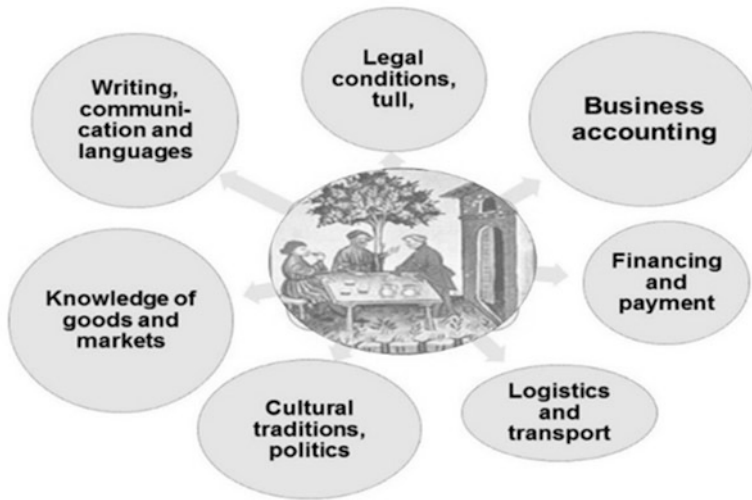


Fig. 21.1 Qualifications of Merchants in the Middle Ages (Source: Kaiser 2014)

Hundreds of years after the expansion of markets in the late Middle Ages commercial employees evolved as a societally relevant ‘mass phenomenon’ in association with the industrial revolution and accompanying increasing urbanisation.

Following the expansion of capitalism to the production of goods and the spread of wage status, the merchants themselves became dependent employees. (Haipeter 2011, p. 22, ‘authors’ own translation’)

Being a commercial employee was now no longer a way station for apprentices as they progressed to becoming independent merchants, something previously associated with a significantly emphasised position of trust vis-à-vis the entrepreneur. It had become a permanent employment prospect which became increasingly subject to systematic division of labour, specialisation and mechanisation insofar as administrative activities were concerned. The predominant situation was, however, that the traditional, specific position of trust within a company represented a contradiction to self-organisation in an association which saw itself as a protective community against company interests. This is shown by the indications provided by Reinisch (2011, p. 200 ff.) as well as in the early works of Lederer.

Employees experience their social characterisation mainly from their position as regards the decisive classes of entrepreneurs and workers rather than from their technical or economic function. (Lederer 1912, p. 25, ‘authors’ own translation’)

One may follow the class analysis approach underlying Lederer’s remarks or not, the fact of the initial orientation of commercial employees’ self-organisations towards collegial solidarity, job placement, insurance and continuing training remains.¹

¹By way of an example, attention is drawn to the early years of the Association of Commercial Employees of Switzerland, the history of which has been recently impressively documented (Catrina 2011).

This interim position and the associated ‘middle class consciousness’ of ‘white collar workers’, the term used by Dahrendorf (1959) to describe salaried employees, continues to characterise the mentality of commercial employees down to the present day, although the differentiated hierarchies in companies should not be overlooked when making such circumscriptions (Brötz and Kaiser 2015). Such an interim position requires a different form of remuneration, which at least in the administrative sector has long since been paid in the form of a monthly salary rather than a performance-related wage. It also requires the adoption of the economic logic of entrepreneurs in their attitude towards customers, subordinates and workers combined with a marked sense of loyalty of ‘industrial civil servants’. In the 1990s, Kotthoff spoke of a ‘contribution orientation’, which is indicative of highly qualified employees whose work is characterised by degrees of freedom and their own budget responsibility.

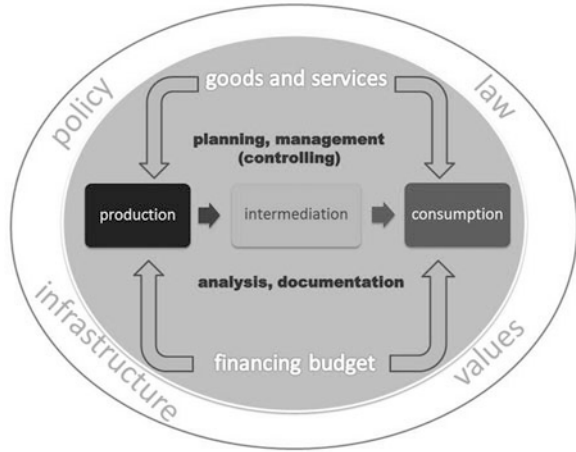
They do not see themselves as instruments in the hand of an apparatus but prefer to perceive themselves as *homo faber* entitled to lay a claim to help shape things. They believe that they can afford to adopt such a claim, which leaves behind the psychology of pure worker status. This is their privilege. (Kotthoff 1997, p. 34 ff., ‘authors’ own translation’)

This contribution orientation is based on the entry into an implicit contract between the employees and the respective employers. Whereas one side offers motivation and loyalty without the necessity of permanent monitoring of performance and behaviour, the other provides increased participation (remuneration), integration, security, and career options. If these privileges do not come into effect and if international labour competition is exacerbated, the employees react by aligning themselves more strongly with traditional trade union ways of asserting their interests (Haipeter 2011).

If we now look at the societal function of merchants as the relevant factor determining the characteristics and mentality of commercial employees alongside their position in the company, it becomes clear that ethical reasons led to an initially low prestige of the merchant status. Because merchants did not work with their hands to contribute to the common good due to the fact that they did not produce agricultural goods or craft trades themselves, it was not until long-distance trading arose that they were able to gain the respect enabling them to rise to become aldermen or even ascend to the nobility and thus also be accorded political influence and esteem (Reinisch 2011). With regard to the essential categories of national economic models, merchants and their employees are only involved with production to the extent that they organise the delivery and procurement of goods and undertake logistical tasks (Brötz and Kaiser 2015).

Their societally relevant fields of activity are concentrated rather on circulation (of money and goods), supporting consumption insofar as marketing, distribution and sales are concerned, and distribution (in the sense of division of labour, company organisation and regulation of participation in profits and risks). In connection with the increasing significance of capitalist means of production and thinking, the last two fields of activity gain importance when the aspiration for the efficient organisation of processes becomes a driving force behind the acceleration of manufacture and transshipment and thus characteristic of commercial and business ori-

Fig. 21.2 Operational functions of commercial employees (Source: Brötz and Kaiser 2015, p. 63)



ented company management systems. Having a look at the tasks the business employees fulfil in companies (Fig. 21.2) we can see that it depends on whether they are situated in the ‘back office’ or in the ‘front office’. So they support the production system with administrative, organisational tasks and financial controlling or keeping contact to the customers and the supplier chain.

We may, therefore, speak of a reciprocal relationship between the increasing attention displayed to commercial employees, their growing political influence, the increasing quantitative significance of the activity of commercial employees and the assertion of capitalist oriented ways of thinking.

2 Empirical Data Collection – Methodological Remarks

The investigation of former and current sociological literature about commercial employees reveals main influences concerning their mentality, but we don’t get detailed references on the actual demand for qualifications and tasks. To get related findings about that, we carried out two empirical studies: First, a detailed analysis of the current training regulations in business and administration occupations, because they are results of the collaboration of the social partners in Germany and thereby include the knowledge about actual tasks at workplaces. In a second step a questionnaire was developed based on the theoretical findings and the findings of the just mentioned analysis. This survey of 2,304 employees in commercial and business service occupations was conducted to find out more about employees’ tasks, skills and self-concepts. The basis for the hypotheses investigated in the survey and the questionnaire design is the systematic analysis of the relevant initial and advanced training curricula. Additionally, data from the German BIBB/Federal Institute for Occupational Safety and Health (BAuA) Employment Survey (Hall et al. 2014) conducted by the BIBB and the BAuA are evaluated to answer the

research questions. It was used to find employees working in commercial and business service occupations willing to take part in the follow-up survey. The findings allow a deeper understanding of the tasks, skills and self-concepts of these employees as well as their need for further training and their future prospects.

2.1 The Qualitative Analysis of Training Regulations

To find out which training regulations need to be analysed we took a look at their names. In case they included hints on business tasks we choose them and examined more detailed if they include dealing with accounting or activities in a customer focused way. At last we had a corpus of 54 initial training regulations and 33 further training regulations for commercial and business service occupations. The initial training takes place in the German dual system so we divided the regulations into two main parts depending on whether they belong to the workplace part or the school based part of learning.

The methodological design of this study follows the inductive approach of Phillip Mayring's qualitative content analysis (Mayring 2000). It is a step by step formulation of codes based on the material. The theoretical and empirical knowledge researchers have before should be ignored during the encoding process. Due to this inductive approach many codenames follow the original description we found in the texts. After analysing six training regulations we reached the so called "theoretical saturation" (Glaser and Strauss 1967) of the main codes which contain the most frequently mentioned qualifications and skills. At last we had over 36,000 codings in 140 different codes that we assigned four main categories:

1. Commercial similarities,
2. Specialisation and differences of commercial content,
3. Comprehensive qualifications, and
4. Non-commercial qualifications.

We could distinguish the comprehensive qualifications from the others based on a contrasting study of training regulations in the field of handcraft and industrial occupations. The non-commercial qualifications contain more technical qualifications of service activities only necessary in special branches such as in fields of logistics.

2.2 The Survey of Employees in Commercial and Business Service Occupations

In this part of the project data from a follow-up study to the German BIBB/BAuA Employment Survey 2012 of 20,036 employees in commercial and business service occupations were analysed. The intention of this analysis was to gain deeper

understanding on tasks, skills and self-images of service-workers as well as their demand for further qualification and their future prospects. The gross sample for the follow-up consisted of over 7,000 employees in commercial and business service occupations who agreed on taking part in a second survey. Both surveys (initial and follow-up) were conducted as a computer assisted telephone interviews (CATI)² with extensive pre-testing. The net sample contains 2304 employees in ten relevant professional groups. The survey is connected in different ways (e.g. questionnaire design and sample-stratification) to the above presented results of the curriculum analysis as well as the literature studies.

The professional groups reflect the degree of correspondence regarding occupational contents. The starting point was a grouping of initial and further vocational training qualifications, for which the curriculum analysis showed comparable contents. A set of professional occupations, which could not be directly linked to an initial or further training occupation, but which imply a commercial background have been considered within the survey. Here it has to be stated that the German Dual System contains only 350 regulated occupations requiring formal training compared to 2,500 classified and about 30,000 professional occupations overall. The stratification allows the creation of a research sample which contains enough information about all ten occupational groups of interest.

The grouping was not done by using a statistical approach but was based on the key aspects regarding the content of the training occupations within the project. These are on the one hand determined by the branches (e.g. public service, financial services), but on the other hand also by professional tasks and organizational functions (e.g. processing). Occupations within the service sector are differentiated into 'service traders' and 'other service workers'. Occupations on which the focus lies within the project were grouped as 'service traders'. All other occupations in the service sector have been grouped as 'other service workers'.

While grouping all the occupations the orientation towards a certain branch was more important than the concrete function of the employees. Based on this analysis of training occupations the following groups were built:

- Traders,
- Financial service workers,
- Service traders,
- Civil service,
- Other service workers,
- Clerical assistants.

²The sampling procedure for the main survey followed a Gabler-Häder approach where random telephone numbers were generated on stumps and after a Kish-selection called. Then a screening took place to establish whether the called person was part of the desired sample (core-employment, International Labour Organization (ILO)-definition). The gross sample for the follow-up was structured in ten strata of occupational groups where each strata had to be filled with 250 respondents. Design and structural weighting were applied where appropriate.

By means of the occupational characteristics indicated by the group titles besides training occupations also a variety of other commercial occupations can be allocated within a certain group. For the remaining commercial occupations in addition the following groups were built:

- Sales staff,
- Management,
- Specialized traders,
- Desk work.

3 Empirical Findings About Similarities

3.1 Findings of the Analysis of German Training Regulations

The analysis pointed out that although we have 54 different training regulations, including automotive clerks who need qualifications to sell cars down to legal secretaries working in lawyers offices, about 70 % of the training regulations' content can be assigned to commercial similarities. That doesn't mean that all the regulations train the same qualifications in that field, but that nearly all occupations have to deal with accounting, information processing and communication (Fig. 21.3).

At the same time, by using a self-developed taxonomic model based on Dreyfus and Dreyfus (1987) and the Bloom-Taxonomy (Bloom et al. 1956), we could show that the apprenticeship training regulations in the field of business and administration all reach nearly the same taxonomic level and that this differs from the level reached by the further training regulations we analysed with the same categories. The further trainings enable to make own decisions on a higher level and to innovate work processes (Kaiser and Kock 2015). Based on these findings we divided the whole family of business and administration occupations into different groups,

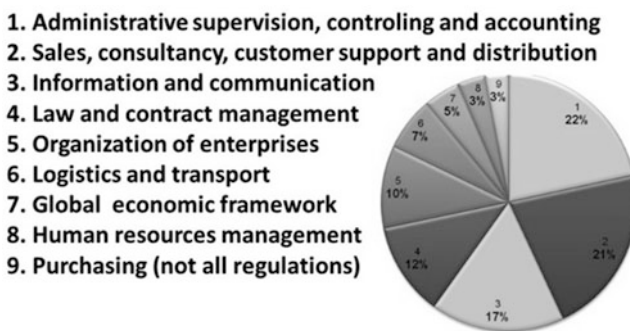


Fig. 21.3 Similarities in the initial training regulations, results of the curriculum analysis (Source: Brötz and Kaiser 2015, p. 73)

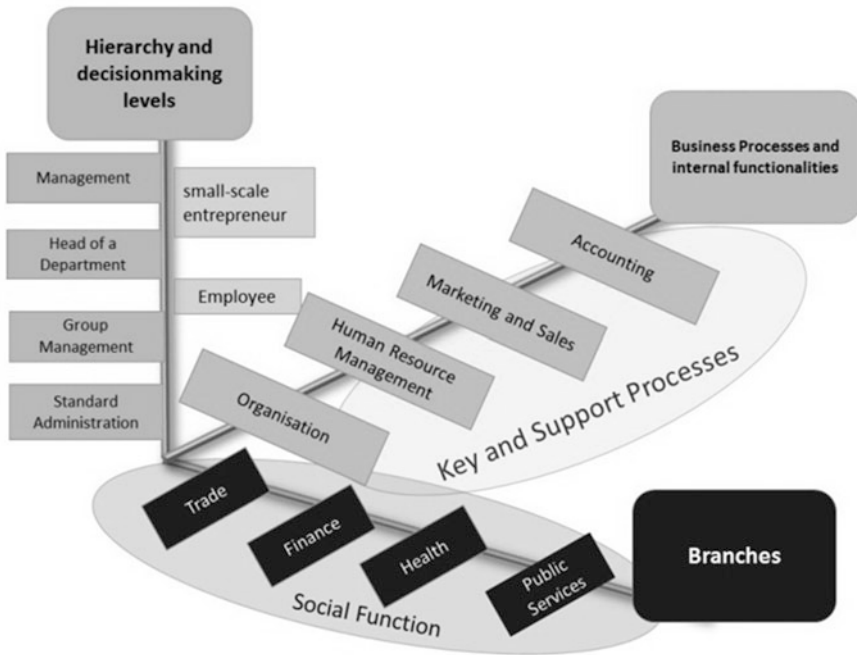


Fig. 21.4 Differentiation of occupations (Source: Brötz and Kaiser 2015, p.58)

based on the similarities in their regulations, and we used the findings to develop a concept for comprehensive competences in further training regulations for business occupations (see above).

To sum it up, we could show that occupations differ according to the national economic field and especially the branch they are acting in (because they are important players in the development of the regulations), by the status of the employee and (easier to find in the further training regulations in Germany) by the company department where they are located (Fig. 21.4).

These main areas of activity exhibit close parallels to historic qualifications of merchants on the one hand (Brötz and Kaiser 2014) and are contained within Austrian, Swedish and Swiss training ordinances on the other hand, as Kock (2013) impressively demonstrates for the German speaking area using BIBB's systematic analysis instrument.

Below the results of the survey are presented: first the perception of their commercial tasks as seen by the individual employees themselves and then the results on an aggregated meso-level over all analysed occupations. In this way also the connections to the results of the curriculum analysis and the literature study are highlighted.

Table 21.1 Occupational groups with their share on all business and commercial service employees

Group	Share
Traders	5.9
Sales staff	12.9
Financial service workers	8.1
Service traders	4.9
Civil service	14.1
Other service workers	8.9
Clerical assistants	10.6
Management	12.5
Specialized traders	7.1
Desk work	15.0

Source: author's own compilation based on follow-up study on commercial and business service occupations to the BIBB/BAuA Employment Survey 2012, weighted values

3.2 *Service Occupations from Employees' Perspective*

The respondents in the study can be grouped in ten occupational groups according to comparable qualification requirements in initial vocational trainings and continuing educations. These groups are listed in Table 21.1 with their shares on all employees in business and commercial service occupations.

Descriptive analyses of the quantitative data give some insight on tasks, skills and self-concepts in commercial and service occupations. The survey proves that commercial employees accomplish tasks regarding the company's accounting in terms of accounting documentation. On average, at least half of the employees carry out tasks as accounting business (49.6 %) or payment transactions (62.8 %). These and other tasks in the field of accounting and controlling are furthermore regarded as typically mercantile by more than 70 % of commercial employees. Other tasks are being carried out less often or less regular and also regarded as service-tasks more often.

Besides, the evaluation of controlling data is partly their task (52.9 %). This validates the outstanding role of the corresponding learning contents in 'commercial accounting and controlling' within the curricula.

The survey indicates that all groups of commercial employees need basic knowledge in the areas of contract law (46.9 %), employment law (49.0 %), corporate law (43.2 %) and tax law (37.1 %). This also validates the findings of the curricula-analysis. The same applies to the area 'information and communication', which is another important part of the curricula. Here 96.8 % of the employees state that communicative skills are 'very important' or 'important' for their occupation. This goes together with another 94.0 % of employees stating that problem-solving skills are at least important for their occupations. While problem-solving and communicative skills are seen as important, skills in the areas of economic frame conditions (70.9 %) and skills in marketing and distribution (65.2 %) are seen as less important or unimportant.

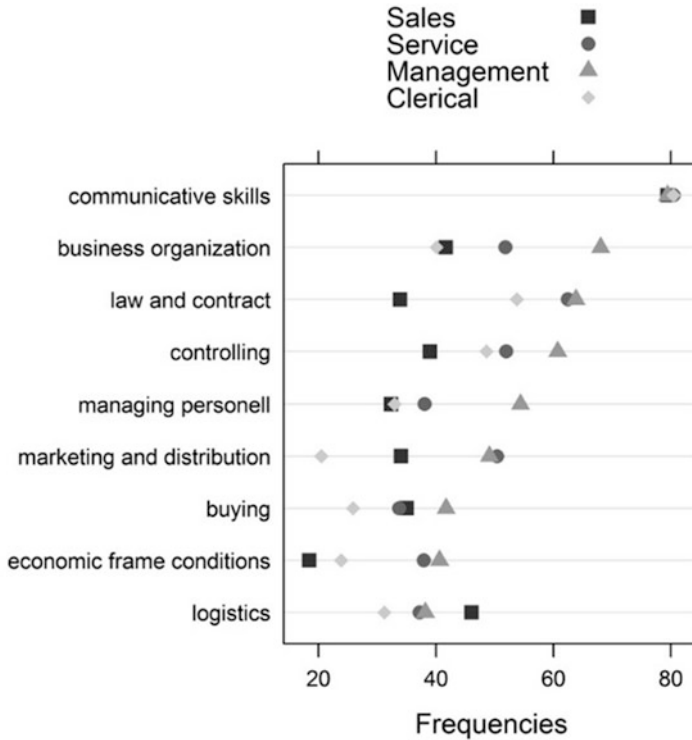


Fig. 21.5 Shares of tasks and skills in four clusters of commercial and business service occupations (Source: author’s own compilation based on follow-up survey on commercial and business service occupations to the BIBB/BAuA Employment Survey 2012, weighted values)

In order to arrive at a more apprehensible and comprehensive understanding of differences and similarities, we grouped the occupations into four clusters, representing ‘Sales’ occupations (including Sales Staff and Other Service Workers, 21.8 % of workers in the field), ‘Service’ (Traders, Service Traders and Financial Service Workers, 18.9 %), ‘Management’ (Specialized Traders and Management, 17.6 %) and ‘Clerical’ occupations (Desk Work, Civil Service and Clerical Assistants, 39.7 %). For recognition we term these groups on the highest aggregation level ‘clusters’, while the ten groups of commercial and business service occupations will be called ‘groups’, although they are actually all groupings of commercial and business service occupations.

As shown in Fig. 21.5 that for most tasks and skills, the cluster of management occupations have the highest shares. While this is not surprising for business organization it is interesting to see that the cluster of service occupations has similarly high shares for skills in law and contract and marketing and distribution.

The cluster of sales occupations shows a distinctively different profile of skills and tasks, with logistic skills being most important for them and marketing and distribution skills and tasks or acting upon economic frame conditions having comparably low significance.

The data support the assumption that the self-concept of commercial employees is formed by customer- and market-orientation. Within the survey, respondents were asked to indicate which type of job-titles could best describe their self-perception. The biggest share (85.1 %) of commercial and business service workers did see themselves as 'service providers', also more than three quarters saw themselves as 'organisers' (78.0 %) or 'consultants' (75.8 %). The answers were condensed into a simple index. If an employee had given more operating descriptors, he or she was indexed as having an 'operative' self-concept. If marketing descriptors prevailed, he or she was indexed as having a 'marketing' self-concept. If both were balanced, persons were indicated as having a 'neutral' self-concept. Overall, 62.2 % of service employees see themselves as marketing people, whereas only 11.1 % perceive themselves as operative people. One in four are neutral to these concepts.

The occupation one has might of course correlate with these self-concepts. Here it can be seen that marketing self-concepts especially prevail in groups like sales staff, (83.3 %) traders (77.2 %) and also financial service workers (73.5 %). The operative conception is held most often in clerical assistants and accounting clerks (23.2 %) and in desk work occupations (19.9 %).

It is interesting to note that what employees in commercial and business service occupations aim at in their work is for 65.6 % to realize a profit (on the level of the firm), only 17.9 % act according to surrounding conditions. This was found by a factor analysis of different aspects which could influence the employees' work, after which an index was built to extract their overall working motifs. From those who aim at realizing profits, 70.0 % also see themselves as marketing people.

Coming back to the four clusters of occupations we can see that management and service occupations are relatively alike in being predominantly profit oriented. The only difference here is that service occupations less often act upon economic frame conditions and vice versa. The sales occupations differentiate themselves by being undecided more often, while the clerical occupations are clearly driven by economic frame conditions more often than any other group (Table 21.2).

3.3 Detailed Results for the Clusters

While the data allow precise overviews regarding different aspects of commercial and service occupations, we will focus on differences and similarities between the clusters here. For results on the professional status of the interviewees we refer to (Annen and Tiemann 2015, p. 149 ff.).

One can argue that the relationship between specific and generic skills which one has to apply within one's employment depends not only on the occupational status but might also differ between the clusters. Actually, these dimensions are somewhat confounded, since management occupations have a higher share of high positioned workers (40.7 % on the level of further education and 18.8 % self-employed), whereas in sales this is not the case (46.9 % untrained and 35.6 % with vocational training positions).

Table 21.2 Types of business orientation by clusters, Cramer’s V: 0.274, Chi-squared: 345,964, df=6, p=2.2e-16

<i>Types of business orientation</i>	<i>Sales</i>	<i>Service</i>	<i>Management</i>	<i>Clerical</i>
Profit oriented	77.78	79.51	79.9	45.23
Economic frame conditions	2.11	9.3	12.56	33.44
Undecided	20.11	11.19	7.55	21.33
Sum	100	100	100	100

Source: author’s own compilation based on follow-up study on commercial and business service occupations to the BIBB/BAuA Employment Survey 2012, weighted values

Fig. 21.6 Shares of generic skills in four clusters of commercial and business service occupations (Source: author’s own compilation based on follow-up survey on commercial and business service occupations to the BIBB/BAuA Employment Survey 2012, weighted values)

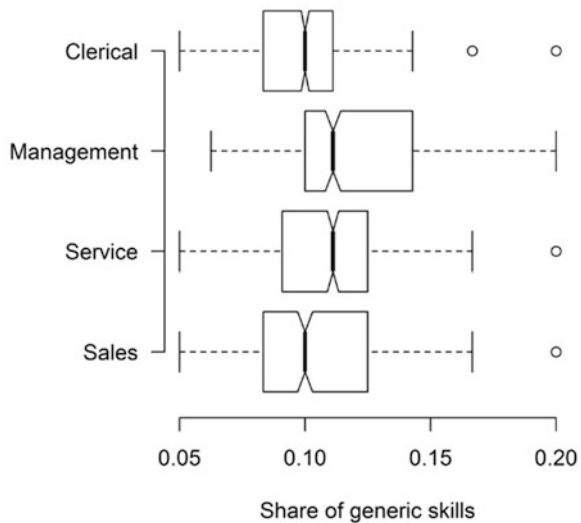


Figure 21.6 shows how the shares of generic skills differ between clusters. We clearly see that sales and clerical occupations have relatively low shares of generic skills, while management and service occupations have higher shares. Albeit a quarter of employees in management occupations have at least a share of around 14 % of generic skills, they are comparable to service occupations. Also, clerical and sales occupations are similar in this respect. The differences between these two groups of clusters in the mean shares of generic skills are significant.

For self-employed persons the share of generic skills seems to be relatively small (around 12 %, not depicted). This might be due to the fact that these persons have to do tasks which are in a bigger enterprise done by employees in a lower hierarchical position. Nevertheless self-employed persons are characterized by a significantly higher share of generic skills needed than employees in a low (around 9 %) or medium (around 10 %) qualified position.

Table 21.3 Shares of occupations workers hold after learning a specific occupation in four clusters of commercial and business service occupations

(...) percent of learned occupation go to held occupation

Learned occupation	Held occupation				Sum
	Sales	Service	Management	Clerical	
Sales	66.13	9.19	5.59	19.1	100
Service	16.13	48.09	12.67	23.11	100
Management	7.56	14.53	54.07	23.84	100
Clerical	7.25	9.32	11.8	71.64	100
Other	27.4	14.81	31.27	26.52	100

Source: author's own compilation based on follow-up survey on commercial and business service occupations to the BIBB/BAuA Employment Survey 2012, weighted values

3.4 *Qualification-Related Matching of Training and Professional Occupations*

Table 21.3 gives an overview on to what extent the trained occupation and the performed occupation match in the clusters. For the singular groups we find that in the majority of the groups the majority of employees have also completed an equivalent training, which means in an occupation located within these ten groups. Interestingly within the group 'Management' the second smallest share of persons can be identified who have not completed an equivalent training, only outreached by the group 'other service workers'. The two groups 'sales staff' and 'specialized traders' also hold a share which lies below the average. This result is complemented by the respondents' estimation how their professional training prepared them for their actual profession. While two third of the respondents think that their training is still related to their actual employment, the respondents belonging to the groups 'sales staff' and 'service traders' do so less often. Furthermore almost two thirds of the respondents in the group 'management' think that they have been well prepared for their actual employment by their training route.

For the clusters of occupations we see that in management and service occupations we have the lowest share of 'stayers', i.e. people who managed to work in their trained occupation. The difference between the two clusters is that in service occupations there are only 14.8 % of employees with a non-commercial training background whereas for management occupations we have 31.3 % of career changers.

This picture changes somewhat if we contrast it with employees' assessment on what their held job has in common with their training occupations. In the cluster of sales occupations only 51.2 % say that their training occupation is akin to their held occupation – although we have two thirds of 'stayers' in this cluster. In the management cluster we find the highest share of employees stating their current job and their trained occupations are alike with 71.1 %, although this cluster has the second lowest share of stayers. Clerical and service occupations are very similar with 69.9 % and 70.2 % respectively indicating their trained and held occupations are alike.

Especially for service occupations it is interesting to see that although workers were trained in a non-service occupation they still see themselves as trained in this field.

4 Conclusion and Desiderata

In the following chapter we summarise the conclusions worked out in the last years, make suggestions for further research and political practice and finally provide recommendations for the contents of training regulations with regard to current and future challenges.

Based on our findings we describe the distinctive characteristics of the family of business and administration occupations with the following definition:

1. Commercial assistants are characterised by making decisions between reducing costs and achieving targets.
2. They build bridges between: Enterprises and customers; planning, production and service. They are agents for goods, money, information and service.
3. Commercial assistants take external factors into account for their activities, especially the market, politics and the law.

Commercial assistants work in various value chains and are directly or indirectly involved in the conclusion of contracts as well as buying and selling goods or services. In the private sector they act in a mediating function between customers and enterprises. They use information and communication technology to document and control processes from a business point of view. They try to minimise risks and maximise profits. Public employees in those occupations have similar tasks and nearly the same skills, but they try to follow legal requirements and different targets such as public welfare and equal treatment.

Preceding studies within the project on ‘similarities and differences between commercial and business service occupations’ found a common core of comparable qualifications and contents of these jobs. Employees working in commercial and business service occupations show clear trends regarding self-concepts or aims of their work. But as for single tasks and skills it becomes clear that there are differences between several groups of service occupations. These are mainly coined by tasks, scope of organizing and the position within the firm. As the project aims at building a framework for describing commercial and business service occupations, being able to define common cores and relevant differences, another important finding is that the grouping of service occupations within the project worked very well. This forms the ground for tackling the challenges on relevant training occupations within the German Dual System efficiently and well informed (Annen and Tiemann 2015, p. 167 f.).

Based on the findings it is possible to describe the core profile of business and administration occupations and to formulate standards for them on the level of initial and further training. Not so much in the sense of dogmatic orders but rather as

recommendations for future developments. Regarding the further training regulations we developed a type of standard in cooperation with the social partners and the federal ministries and based on our findings (Jordanski et al. 2014). We argue in favour of the implementation of a (type of) monitoring instrument to continuously get the data and thus to make sure the knowledge is always up-to-date. That would help the VET-schools with a reasonable merging of courses in times of demographic change and decrease of training figures.

Referring to the content of the training regulations, it is worth mentioning that even though business assistants and managers very often act as decision makers we could find hardly anything about ethical or biographical reflection. The same applies to sustainable development and the development of co-determination skills. This might be one reason for some undesirable economic developments in the last years, as the same lack shows in academic business studies. The new way of developing VET-School curricula following training regulations closer than before with the so called ‘Lernfeldansatz’ (learning areas approach) connected the school based learning closer to the work based learning and offers the opportunity to reflect the contradictions of acting in the field of conflicting interests between the enterprise, the customer or business partner and the employee himself, for example in the context of ‘customer-orientation’. But is it really one of the aims of vocational training to enable qualified workers to be ‘sand in the transmission’ by asking the right questions at the right time?

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Chapter 22

Reproduction of Social Inequalities in the Case of Economic Education in Vocational Education and Training (VET) Schools – Theoretical Considerations on the Concept of Reflexive Pedagogy

Sabrina Berg

Abstract The German education system in general and the vocational school system in particular aim to follow meritocracy as a guiding principle. Thus, all children should have equal chances for success at school independent of their social backgrounds. As they are the first instance of socialization, families have a special impact on learning processes, which also holds true for economic education. Taking into account subject-oriented learning theory, learning hindrances and learning resistance possibly correlate with the social background and experiences of the learner. The Bourdieuan concept of reflexivity offers a method which can be transferred to the teaching and learning process and can be considered for economic education. In this paper, facts are presented to show that the claim that meritocracy is applied as a principle for the German education system is just a myth. In the case of vocational schools and especially in the case of economic education, quantitative and qualitative studies are presented, that show the impact of family background and the perceptions of teachers towards the family backgrounds of pupils. Finally, considerations on the Bourdieuan concept of reflexivity in the context of science are transferred to the field of pedagogy. This ‘reflexive pedagogy’ is reconstructed for economics education in the VET-system in particular. To follow up this line, implications for teachers and teacher training are discussed.

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1 Outline of the Issue

Meritocracy as a guiding principle of the German education system in general and the vocational school system in particular underlines that all children should have equal chances for success at school independent of their social backgrounds. The starting point of this paper is that the merit principle is undermined by the impact of social background and the schools', and particularly the teachers', middle class orientation. Society's demand for meritocracy is lacking for several reasons such as the school system in general, less orientation towards learning processes of learners that have an educationally deprived family background, and finally due to the teachers themselves (Ditton 2007, p. 265). Families as the first instance of socialization (Berger and Luckmann 2012) have a special impact on learning processes, which also holds true in the case of economic education. Within the term "*cultural matching*" (Kramer and Helsper 2011) this correlation is not only discussed in relation to the education system in general but also the teaching and learning processes in economic education in particular. From the point of view of subject-oriented learning theories, learning hindrances and learning resistance possibly correlate with the social background and experiences of the learner.

This paper is structured as follows: first, meritocracy as a principle for the German education system is presented as well as details that show in how far its application in the system is in fact just a "myth" (Stauber 2014, p. 102). To illustrate this correlation in the case of economic education, empirical studies are presented that show the impact of family background on economic literacy. Furthermore, results are presented of a qualitative study that deals with the question as to how far teachers from vocational schools take social background into consideration when teaching or planning economic education lessons. Finally, the Bourdieuan concept of reflexivity (Bourdieu and Wacquant 2006) in the context of sociology is transferred to the field of pedagogy. This reflexive pedagogy is reconstructed for economics education in the VET-system in particular. To follow up this line, implications for teachers and teacher training are discussed.

2 Merit Principle as a Guiding Principle in the VET-System

Access to education is a major part of democratic society in Germany (Solga 2009, p. 396). Following this basic right, which is anchored in the German constitution, the meritocratic society is based on the idea that individual effort should be rewarded (Solga 2009, pp. 396–397). Inequalities in, for example, access to job positions and higher education as well as unequal pay and differing economic status are legitimate and fair as long as the inequalities are based on individual literacy and effort (Solga 2009, p. 396).

Integration in society is ensured as long as there is general agreement on these legitimate rules in society itself (Becker and Hadjar 2009, pp. 39–40). If this

agreement no longer exists or if there is only partial agreement, this could lead to social tensions (Becker and Hadjar 2009, pp. 39–40). Relevant for the case in this paper is that social background does in fact determine access or not to education and permeability of the school system, a fact which undermines the meritocracy.

Although it is to be expected from the school system that every child is given the same chances for success at school independent of his/her social background, school does not in fact enable social permeability for everyone, and therefore represents a “merit illusion” (Geißler 2012).

The idea of “permeability” has attained an important status in the discourse of (vocational) education system orientation (Frommberger 2009, p. 1). It has become a nationally and internationally desirable concept and especially a demand for the educational system as a whole (Frommberger 2009, p. 1). Due to the increase in the number of higher education certificates attained, these more valuable certificates become at the same time both more important as well as meaningless, which is a “quality paradox” (Frommberger 2009, p. 3). Hence, informal distinction characteristics and additional qualifications become more important (Frommberger 2009, p. 3) However, they undermine the merit system and raise the social and cultural capital one has gained by birth to a central impact (Frommberger 2009, p. 3). Thus, social background becomes more important.

In the German school system, it has been detected, especially after the so called PISA-shock in the early 2000s, that the system produces and reproduces social inequalities. Important in this context and for this paper is that the social background of a pupil is *not relevant per se*, but is made *relevant* in the school system for example in the middle-class orientation (Stauber 2014, p. 102) of teachers. Teachers are not conscious of discriminating pupils, but their perceptions have to be proofed for subjective theories concerning the personality and abilities of children from lower social classes (Ditton 2007, p. 265). The German education system has expectations concerning for example behaviour, abilities and skills, which are more compatible with the habitus of upper social milieus (Ditton 2007, p. 265). Thus, children from upper classes are more compatible with what is expected and honoured at school, while at the same time, there is a social bias in what teachers expect as abilities or intellectual potential of pupils (Ditton 2007, p. 265).

3 The Case: Economic Education

Economic education processes do not start at school, rather, they start in the primary socialization context in the families. Economic socialization is therefore a home-grown product also influenced by external agents such as school and peer environments (Alhabeeb 2001, p. 5). In the field of financial socialization, parents are considered to be “the most influential agents of socialization in the lives of their children” (Kim et al. 2011, p. 669). They model consumer behaviour, they make rules for their children’s consumer behaviour and they discuss with their children for example money and loans (Allen 2008, p. 352 cited by Kim et al. 2011, p. 669).

To sum up, financial practices are learned through interaction with parents (Kim et al. 2011, p. 670).

3.1 The Impact of Families on Financial and Economic Education

In the following chapter, some studies will be presented that deal with the impact of family socialization on economic literacy, and the impact of teachers' perceptions of socio economic backgrounds on teaching and learning situations. One point to be kept in mind while reading is that the socialization in families is linked to the social background of the future pupils and therefore also determines attitudes toward economic issues in school education.

3.1.1 Empirical Findings Related to the Impact of Families on Economic Literacy

What can be seen from the PISA-findings on financial literacy is that the socio-economic status has a powerful influence on performance in all countries. In addition to this, of the components of socio-economic status, the occupations of the parents have a larger influence on the variations in financial literacy than the parents' education (OECD 2014, pp. 96–97).

As concerns the main point in this paper, one interesting fact shown in the PISA-testing of financial literacy was that on average a more socio-economically advantaged student scored 41 points more in financial literacy than a less advantaged student, and this was true for all participating OECD 2014 countries and economies (OECD 2014, p. 14).

Thus, this might be a first indicator of how the role of a family's financial and economic socialization is linked to the socio-economic status of the pupils and their families. What is of interest for the focus of this paper in order to gain a better understanding of the role and relevance of a family's economic socialization, is that the PISA study also discovered something about the impact of the level of education and occupations of students' parents (OECD 2014, p. 81). Parents have an influence on children's skills in financial literacy as they are role models and their own occupations and education affect the environment in which their children grow up (OECD 2014, pp. 84–85). The financial literacy of students is strongly related to their parents' occupations (OECD 2014, p. 87). In all participating countries and economies, students with at least one parent in a skilled occupation performed better in financial literacy than students whose parents had a semi-skilled or elementary occupation.

If we think about the different educational programmes (Bildungsgänge) in the vocational education system which are also concerned with economic issues, this correlation is possibly relevant for the process of teaching and learning.

In addition to this, Lewis and Scott (2003) observed that financial activities were more common in professional families. Furthermore, parents in semi-skilled and unskilled manual occupations saw less need for schools to provide personal finance education (Lewis and Scott 2003, p. 138). The results of Lewis and Scott's study show that parents in semi-skilled occupations are not only less interested in helping their children at home to become financially competent, they are also less likely to want schools to take an active role in providing financial education (Lewis and Scott 2003, p. 146).

Furthermore, it has an influence on financial literacy whether or not the students' parents work in the financial sector (OECD 2014, p. 81). It can therefore be stated that "financial literacy is also related to the type of occupation in which parents are engaged" (OECD 2014, p. 81). Students whose parents work in finance show a higher performance than students whose parents work in other occupations." This result reinforces the idea that family characteristics can have a sizeable impact on the financial literacy of students" (OECD 2014, p. 90).

Transferred into the context of economic education, these findings might indicate that those pupils whose parents are more familiar with economic issues have an advantage at school over those whose parents are less familiar with such issues.

Clarke et al. (2005) assessed the modelling and teaching of adult financial roles to children and adolescents and the implementation of these roles in early adulthood. Therefore their study also assessed the impact of various demographic variables on financial role transfer. They observed that financial role transfer takes place more often with parents in the home than with sources outside the home (Clarke et al. 2005, p. 321). Thus they stated, "Parental involvement is a key to enhancing financial literacy" and among the particular sample involved in their study "very little financial literacy coming from outside influences" (Clarke et al. 2005, p. 331).

Webley and Nyhus (2006) investigated the notion that the behaviour of parents influences the economic behaviour of their children. They investigated whether aspects of economic socialization influence economic behaviour in adult life.

The results show that parental behaviour (such as discussing financial matters with children) and parental orientations (conscientiousness, future orientation) have a weak but clear impact on children's economic behaviour as well as on economic behaviour in adulthood. (Webley and Nyhus 2006, p. 140)

The relationships they found in their paper were not strong ones, but they:

Provide the first evidence of a link between parental approaches to economic matters and that of their children. It is clear that features of economic socialization (for example, discussing financial matters with one's parents) do have an impact on the future orientation of children, although the size of the effects is very small. (Webley and Nyhus 2006, p. 160)

Shim et al. (2010) tested a conceptual financial socialization process model, specifying four levels that connect anticipatory socialization during adolescence to young adults' current financial learning, to their financial attitudes, and to their financial

behaviour. They discovered that early financial socialization has an influence on financial learning, which in turn has an influence on financial attitudes and subsequently to financial behaviour (Shim et al. 2010, p. 1457).

To sum up, the statement that a family's socialization has an impact on economic and financial behaviour and literacy is valid. The studies that have been presented in this chapter Sect. 3.1.1. are not linked to teaching and learning processes at school. To learn more about teachers' perceptions of the relevance of socio-economic background and determination of economic education processes, a qualitative study with teachers from vocational schools is presented in the following Sect. 3.1.2.

3.1.2 VET Teachers' Perceptions of the Social Backgrounds of Learners in Economic Education

Teachers in vocational schools in Germany come into contact with a broad range of pupils as they are involved in different educational programmes, (Bildungsgänge) for example courses for full-time basic vocational education (Berufsfachschule), courses for pupils in the dual system, courses for pupils aiming for a secondary school qualification (Berufliches Gymnasium with graduation Abitur 'A' level). Economic topics can be found in vocational schools in many educational programmes. In this particular study, six teachers from vocational schools were interviewed to determine the extent of teachers' perceptions of the socio-economic backgrounds of learners in economic education. The method was an episodic interview (Flick 2008). With this method of qualitative interview, semantic and episodic questions can be asked to figure out the range of social representations to an issue, and this is then a mixture of individual and general social knowledge and thinking (Flick 2008).

A guideline with three relevant fields was drawn up for this study, which were: (I) job-biographies, (II) economic education and (III) social background. To analyse the data, the recorded interviews were transcribed and thematically coded (according to Strauss 1991). After that, a single case description for each case was made and categories for all the cases were defined that allow a comparison of differences and commonalities in a particular category. These categories then represent the social conceptions towards a category (Berg 2014a).

According to the research approach in this paper, findings from the category *social background of the learners* are presented. When comparing teachers' comments on this category, there is one commonality, which is that the teachers in the survey state that the social background of a pupil is not, or should not be, relevant for the planning and carrying out of their own economic lessons (Berg 2014a).

That must not play a role! (...). It must not play a role. That we are paying attention to it. I cannot imagine that colleagues, but perhaps I am in a sense idealistic. But of course is it playing a role, no question. But it is, we are encouraged for it not playing a role. And that we try to bring the pupils in a position that social background is not playing an important role. That is at least my attempt. It should not, it should not play a role. And we have to put

effort in bringing everybody in a position to be successful in job or anywhere else. (I 4) ('author's own translation')

Another commonality that came along with the negation of the relevance of social background was that teachers strived to treat all their pupils equally (Berg 2014b). An example for this is the following quote:

No, actually not, we treat all (of the pupils – author's note) equally. (I 1) ('author's own translation')

What can be seen from this is that the teachers approach to meritocratic principles is effective (Berg 2014b).

When being asked about the relevance of social background, the teachers interviewed were of the opinion that the social background of pupils is not relevant in the planning and teaching of economics education. When going into depth in the interviews, a slide in tendencies can be detected, that it is more pronounced than the teacher first stated (Berg 2014a).

That social background is considered of some importance for the education process in class becomes obvious when looking at episodic sequences. When discussing social background in economics education, sequences can be found that are about:

- The relevance of social background in general in education processes,
- The relevance of social background in the economic education process in particular, and
- The relevance of social background when considering concrete objectives in economic education (Berg 2014a).

With reference to (a) this is a quote showing the relevance of social background in general in the education process:

It is important to know where they are coming from, so that one knows where to start from (...). That makes the thing more exiting and it makes pupils behaviour more transparent if one knows, ok he is coming from a family where just the mother is working and the father does not exist. Sometimes I have the feeling that we teachers see, where someone is coming from. (I 5) ('author's own translation')

The next quote is about (b) the relevance of social background in the economic education process in particular.

There is somehow a difficulty behind. One the one hand, it is important if half of the pupils parents in class is unemployed. Then I can not only focus on the world of work all the time, but also have to bring other things in. On the other side I do not try to analyse the social milieu because that sometimes makes me unfree. (I 2) ('author's own translation')

The following quote is about (c) concrete objectives in economic education:

If pupils have to switch sides from consumer to supplier in the BFS 1 section¹. And that I of course know (...) or I suppose to know that those who are good in this side-switching, that

¹BFS1 means Berufsfachschule 1: This educational program includes one or two years of school. It is a full time basic vocational education and offers the opportunity to get a middle-school-degree.

they know what their parents or at least of of their parents is doing and that this is not strange. Therefore one has to have job and that those people, but this might be a prejudice – who get social benefits, well side switching is of course equally important for them but I suppose that is possibly more difficult for them (...). (I 4) ('author's own translation')

3.2 Conclusion: Social Background Undermines the Merit Principle and Causes Problems of Cultural Matching

The role of family, socialization and socio-economic background plays an important part in enabling access to education. The importance of family financial socialization for financial literacy and financial behaviour has been shown. This can be undergirded with a quote from Gudmunson and Danes (2011):

One point to note is that we do not suggest that family financial socialization is the only factor (...) affecting financial behaviour throughout a person's life. Rather, what we state is that it is a largely ignored process empirically in personal finance literature. (Gudmunson and Danes 2011, p. 663)

What is rarely discussed in the field of economics didactics is in how far teachers are possibly sensitive to the impact of social background while at the same time providing the same chances for everyone to gain access to economic education in order to fulfil meritocracy as a guideline. This point is even more important as teachers already have knowledge of the pupils' social background and their access to economic education (Sect. 3.1.2.).

As Gudmunson and Danes stated further:

Continuing to ignore family socialization processes is like attempting to tie one's shoe lace with only one hand – an essential element is missing. Inclusion of family financial socialization processes in future personal finance research will address the 'whole person', not just a person's work and consumer life with an emphasis on financial outcomes devoid of the socialization processes that are essential in obtaining those outcomes. (Gudmunson and Danes 2011, p. 663)

As we now know from these studies on the impact of socio-economic background, more research concerning the processes in teaching and learning needs to be carried out to avoid problems of '*cultural matching*' and '*learning hindrances*' in economic education. Within this context not only elements that hinder these processes might be found, but also elements that promote financial learning processes for everyone. What was seen concerning concrete objectives in economic education (Sect. 3.1.2.) was that the teachers' opinions of switching economic roles are possibly correct when taking into account the other findings in financial literacy and parents' occupations (Sect. 3.1.1.). Therefore, considering economic education from this perspective – the question is:

How can teachers take the social background of the pupils into consideration while at the same time avoiding learning hindrances and ensuring equal chances for access to economic education?

4 Discussion: Reflexive Pedagogy

Critical comments on teaching processes are mostly limited to didactical abilities – questions of motivation and discrimination are avoided (Solga and Dombrowski 2009, p. 41). Social background as a relevant factor and a task to be addressed is generally neglected in teacher training (Solga and Dombrowski 2009, p. 41). Educational sociology as a major part in teacher training is limited (Solga and Dombrowski 2009, p. 41). Pedagogy does not sufficiently take into account the social background of pupils as a topic for teaching and learning processes (Böttcher 2005, p. 10). Therefore the impression is often given that upper class children have more abilities than lower class children (Böttcher 2005, p. 10). If teachers are not trained in the didactical implications of a pupil's social background, they might be responsible for the reproduction of social structures themselves, without being aware of these mechanisms. If they for example treat children who are underprivileged differently from others, performance expectations for these children are reduced (Böttcher 2005, p. 10).

From the perspective of this paper, the question might now be posed as to how teachers could cope with the different social backgrounds of their pupils.

One possible concept that fits this research gap is the Bourdieuan concept of reflexivity (Bourdieu and Wacquant 2006). This type of reflexive pedagogy is directed at illustrating the correlation between the pedagogic relationship to a pupil's social background and learning outcome (Böttcher 2005, p. 11) The aim of this reflexive pedagogy is to make teachers conscious of the social background and the pedagogic practices that reproduce social inequalities (Böttcher 2005, p. 11).

In line with the concept of reflexivity, Bremer (2009) argues, that pupils bring their preconditions in institutionalized learning processes (Bremer 2009, p. 296). Those preconditions have to be considered (Bremer 2009, p. 296). If learners are heterogeneous and bring in class-specific differences, there is a need for specific pedagogic strategies (Bremer 2009, p. 296). He states, that class- and milieu-specific access to knowledge as of social hierarchy have to be deciphered and de-hierarchicalized and development of pedagogic operations has to be promoted (Bremer 2009, p. 297).

Teacher training should have the objective of ensuring that future teachers learn about the learning circumstances and life circumstances of disadvantaged pupils (Böttcher 2005, p. 11). This might be a starting point for discussion of the Bourdieuan concept in economics education.

4.1 *Social Structures and the Teaching and Learning Process*

According to the subject-scientific learning theory the phenomena "learning" is based on individual reasons for learning (Holzkamp 1995, p. 33). Therefore learning is not determined from outside but from inside the learner himself (Faulstich

2013, p. 79). It should not be thought that learning happens automatically just because a teacher has learning targets – what children learn and what teachers teach are sometimes worlds apart (Faulstich 2013, p. 79). Concerning (economic) education, from this perspective – the question is: How can teachers interest the children in the learning objective, so that the children gain an individual relevance that leads to a learning action? How can this connecting factor be initiated by teachers and be linked to the planning of lessons and didactic conceptions?

From the perspective of economics didactics, teachers should prepare economic questions and topics close to the lives of their pupils (Retzmann et al. 2010; Euler and Hahn 2007). These life-oriented didactics are found as a core element of the economic education theories relevant in vocational education as well as in general education. In this sort of didactics, teachers initiate a learning setting which corresponds to the daily lives of the learners to lead them into a learning process. The teachers (Dubs 2001) and the learners (Aprea 2011) both bring their respective perceptions into the learning and teaching processes. Learners have perceptions of economic issues from their everyday lives that they bring into organized learning processes. These perceptions can be good for the learning process, but can also erect learning barriers if they are not compatible with the general everyday perceptions (Aprea 2011, p. 100).

On the one hand the theory of didactics of economics requires teachers to orient themselves to the lives of the pupils in everyday situations. On the other hand the role and relevance of economic socialization in teaching and learning is rarely discussed. In the following paragraphs an impression will be given as to how far social structures and the social background of pupils cause learning hindrances and learning resistance.

Pupils who have learning resistance not only often have less resources of time and money but also do not see much sense in learning efforts (Faulstich 2013, p. 137). Lack of time and money are also linked to social structures (Faulstich 2013, p. 137). These pupils are stigmatized as being “disadvantaged”, therefore belonging to a “problematic group” in the society (Faulstich 2013, p. 137). Biographic backgrounds of learners should not be regarded in isolation, as the experiences people make are linked to a specific social milieu (Faulstich 2013, p. 139). Attitudes learners develop are not developed independent of their social milieu and social class (Faulstich 2013, p. 139). Furthermore these attitudes can on the one hand be good for the learning process but can on the other hand also cause learning barriers (Faulstich 2013, p. 139). It was seen from the empirical findings that the socio-economic background of pupils was connected to economic literacy as well as to the importance of a family’s attitudes and behaviour (Sect. 3.1.1.).

Learning processes are also based on biographic experiences with “learning” (Petersen and Zeuner 2012, p. 99). These former experiences determine attitudes and access to learning processes (Petersen and Zeuner 2012, p. 99). Moreover these experiences are decisive for successful learning of new contents (Petersen and Zeuner 2012, p. 100).

Faulstich and Grell (2005) focused in their study with teachers in advanced vocational training on the perspective of teachers towards learning resistance within the teacher's observation, which were:

- Learning barriers/resistance are often regarded in isolation to other important factors,
- Descriptions of reasons for learning barriers are often combined with comments on deficits such as 'social milieu' or 'biography' of learners,
- Less is generally known about resistance to learning and reasons for resistant behaviour (Faulstich and Grell 2005, p. 43).

To sum up, when it comes to learning resistance, teachers know little about individual reasons. Instead of considering their own competences as a teacher, only pupils are considered. Holzkamp (1997) states that learning resistance and barriers come, from an educational system point of view, from the pupil themselves. Commenting on deficits such as "not motivated", "adverse familiar background" or "adverse peer-group" are an indicator for this (Holzkamp 1997, p. 168).

From the perspective of this paper, blaming the pupils' social backgrounds and deficits for learning hindrances might lead to an increase in social inequalities by reproducing class specific stigmata. Hence, as the main emphasis is placed on *teaching and learning* processes when it comes to didactical considerations the question should now be what teachers could do about this.

4.2 Reflexive Pedagogy According to the Bourdieuan Perspective

Reflexive pedagogy according to the Bourdieuan perspective might be one possible concept to fit the research gap, reproduction of social inequalities in the field of economic education and teaching. Reflexive pedagogy is not widely accepted and has not been used for practical research (Rieger-Ladich et al. 2009, p. 11).

The concept of reflexivity in pedagogy is the aim of a research programme to gain a specific view on theory, empiricism and practice (Rieger-Ladich et al. 2009, p. 14). Hence, questions concerning contemplations rise (Rieger-Ladich et al. 2009, p. 14).

The Bourdieuan perspective of understanding is a possibility to sensitise scientists to the fact that the building up of opinions is related to social, cultural and historic habits and perspectives that result from these opinions (Friebertshäuser 2009, p. 243). Reflexivity in this sense is to make people's perceptions and evaluations visible: Where do these schemes (situations, types and interpretation proceedings) come from and in how far are these schemes related to the structures of societies? (Wacquant 2006, pp. 30–31). According to the role of teachers, the social space of the teachers themselves has to be focused on, because their perceptions, valuation and construction of learning arrangements originates from a specific habitus (Bremer 2009, p. 298)

Reflexivity is the most important instrument which gives researchers the opportunity to act against dictates of the academic field itself if they do not know exactly what mechanisms are working in the field (Rieger-Ladich et al. 2009, p. 13). This sort of reflexivity must not only be realized institutional but must also be part of the habitus of the researcher and be institutionalized in the attitudes of researchers (Rieger-Ladich et al. 2009, pp. 13–14).

This perspective can be reconstructed for the field of (economic) education as these questions are not only important for the field of science but can also be transferred to the field of education and to teacher's behaviour in the classroom. With reference to Bourdieu (1992b), Wacquant (2006) summarizes the points of view and interpretations of social scientist researchers are possibly blurred by three biases (Wacquant 2006, pp. 66–67).

4.2.1 Social Background and Social Data

The first bias is due to the social background and the social data of the researcher that is the social class, gender or ethnical background. This bias is the most obvious one and therefore can be controlled best by criticism and self-criticism (Bourdieu and Wacquant 2006, pp. 66–67).

4.2.2 Academic Field

The second bias is less obvious than the first one. It is, in a Bourdieuan sense, the social position that a scientist has in the 'academic field' and in the 'field of power' (Bourdieu and Wacquant 2006, pp. 66–67). The sociologists point of view is like any other conditioned by their position in the field, namely by distance and distinction to others peoples positions (Bourdieu and Wacquant 2006, pp. 66–67; Bourdieu 1992b, p. 139 ff.).

The third bias is the most specific bias for the Bourdieuan understanding of reflexivity. It is the intellectual bias, which is responsible for seeing the world as a 'play'. The scientist therefore tends not so much to see concrete problems that need practical solutions as an ensemble of meanings that have to be interpreted. This third bias is closely linked to the first and second biases; that is, with the social background of the scientist and with his position in the academic field (Wacquant 2006, pp. 66–67).

What do these considerations tell us about teaching processes?

According to Bourdieuan understanding, the concept of reflexivity searches for proof of mechanisms which are anchored in the collective subconscious of the whole discipline such as theories, problems and national categories of academic rationality (Wacquant 2006, p. 68). If teachers have to cope with the initiation of learning processes in general or even have problems with pupils that have learning restrictions, their perspective might be blurred by the same biases a sociologist has to deal with.

As has been seen in this paper, social background and problems of cultural-matching are factors that affect learning and teaching processes in economic education. If teachers, especially those in vocational schools, have to deal with a broad range of pupils with different social backgrounds, they might reflect on their own social background and their (sub-)conscious behaviour and attitudes that come from their class-specific “habitus” (Bourdieu 1992a, p. 135; Bourdieu 1974, pp. 39–41). The teacher’s position in the field of teaching is also very important, because teachers have more power than pupils as they, for example, give grades to pupils.

When taking into consideration the teachers’ perceptions (Sect. 3.1.2.) which are linked to social background in education processes in general, economic education processes in particular and concrete objectives in economic education the Bourdieuan concept can be discussed along these lines. One possibility in this case would be for the teachers to ask themselves in a reflexive way as to how far these perceptions are linked to their own social backgrounds (a) and perhaps realize the cultural mismatch between home and school milieu which might cause learning hindrances. Furthermore they could also evaluate their position in the field of teaching and in the field of power as linked to their own perceptions and attitudes. Most important in this case is that these considerations are made consciously and therefore reflexively and not subconsciously. According to the intellectual bias (c) teachers could by reflection avoid, for example, regarding learning resistances in isolation (Sect. 4.1.). This concept of reflexivity might also be a first step to learning more about the connection between social background, the position in the field and the intellectual bias in teaching behaviour. Thus, the social dimension within the relationship between teachers and pupils have to be realized and identified (Bremer 2009, p. 300). What happens in classroom is not isolated from the teachers and the learner’s position in the social space and their respective positions (Bremer 2009, p. 300). There is a need for teachers to develop a specific reflexivity and diagnostic competences, which takes the position of teachers in the “play” as a starting point (Bremer 2009, p. 300). Thereby they should learn to reflect about their own schemes of classifying pupils (Bremer 2009, p. 300).

To train such scientists’ reflexive habits, training, dialogues and critical evaluation have to be institutionalized. Social organization of social sciences should be targeted (Wacquant 2006, pp. 68–69 according to Solga and Dombrowski 2009 and Böttcher 2005) institutional deficits regarding the importance of the social background of pupils during teacher training can be detected. Teachers as multipliers have the task of following the guidelines of meritocracy as well as they can. Therefore their own perceptions and attitudes can be trained in a way that leads to self-reflection as Bourdieu describes it for researchers of sociology. Bourdieu’s reflexivity approach serves as a means to identity and socially and culturally colored perspectives and enables to detect the resulting different “*biased*” views. (Friebertshäuser 2009, pp. 244–245).

Thus, one way of minimising the reproduction of social inequalities in economic education processes and within heterogeneous groups in vocational schools might be through reflexive pedagogy. Further research might proof these conceptual-theoretical considerations for implications in economics didactics.

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Part VI
Theoretical/Conceptual

Chapter 23

Vocational Knowledge – Regions and Recontextualisation Capability

Jim Hordern

Abstract This paper focuses on the constitution of vocational knowledge, and the development of an analytical framework that seeks to identify and characterise how that knowledge is constituted. Bernstein’s concept of a ‘region’ is outlined as a socio-epistemic entity into which various aspects of disciplinary knowledge are ‘recontextualised’ to meet the requirements of practice. This leads to a discussion of both the ‘internal’ social relations that exist between organisations involved in recontextualisation, and the ‘external’ factors that influence the character of regions, including relations between occupations and the broader macro-context pertinent to vocational practice. Issues of ‘recontextualisation capability’ are considered particularly important for understanding the nature of regions. While it is possible to conceive this capability at a variety of ‘levels’ or in relation to various activities, how knowledge achieves validity in the vocational community and provides a basis for a curriculum is particularly foregrounded here. The discussion is bolstered with examples of regions and recontextualisation processes taken from recent studies of higher apprenticeships in England between 2012 and 2014. In addition, there is some brief engagement with comparative research into vocational education and training systems in order to better understand how differing national contexts and policy-driven change may (re)orientate regions and their capacity to recontextualise.

1 Introduction

Research into vocational and professional education across a range of national contexts has customarily suggested that novice professional and vocational practitioners require exposure both to the knowledge of occupational practice and codified knowledge acquired through educational institutions that have a professional or technical orientation (Billett 2008). Of course, there are substantive variations on this that accent either more structured formalised educational phases to formation,

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or prioritise practice immersion (Beckett and Hager 2002). Whether an approach based on gradual release, concurrence or consecutivity is preferred, questions that relate to professional and vocational knowledge remain pertinent. For example, there can be debate around the extent to which a body of vocational knowledge can meaningfully be “acquired” by individuals, or whether knowledge or apposite “knowing” is primarily realised through co-participation with experienced practitioners in the contexts of practice (Duguid 2005; Fuller et al. 2007). Equally, there is the suggestion that the nature of professional and vocational knowledge is changing rapidly as a consequence of organisational and technological developments, and thus what has been previously taught may have declining relevance to contemporary contexts (Clark and Winch 2004), and thus the occupational knowledge base needs to be continually updated. There are considerations around the extent to which a body of occupationally-relevant knowledge should relate to specific organisations and sectors as much as a given occupation, and which institutions, agencies and employers should be involved in establishing a shared knowledge base for that occupation. Additionally, the underlying problematic of the extent to which valuable knowledge for practitioners in formation can be sourced or accessed from current workplace practice also brings into focus questions around the value of knowledge from disciplinary origins exterior to the immediate field of practice.

Recent work in the sociology of professional and vocational knowledge has established an approach that foregrounds the importance of disciplinary knowledge in the constitution of the occupational knowledge base (Young 2006; Muller 2009; Young and Muller 2014), seeing professional and expert action as relying upon forms of abstract, conceptual knowledge that have been refined and validated through processes existent within professional communities. For Young and Muller (2014) professionalism and professional knowledge are linked, at root, with the emergence and iteration of bodies of “sacred” knowledge that are prized within societies for enabling hypothesising, conceptualisation and the development of theoretical constructs. Such sacred knowledge, as Durkheim (1976) identified, fulfils a valuable role in all societies, signifying the conceptual resources and lessons learnt of previous generations, putting them to work on the “problems” of the present, and helping to build new visions of possible futures. It can be argued that such knowledge has particular value by virtue of the particular social conditions of its production and iteration (Young and Muller 2014; Grace 2014), which are quite distinct from other forms of knowledge in production and use in society (Bernstein 2000). Professional education, knowledge and practice are thus inextricable from questions of professional values, roles and the social conditions of knowledge validation.

From this perspective, the prevalence of theories of professional judgement and action that foreground learning through workplace practice while neglecting the role of abstract, conceptual knowledge developed at some distance from that workplace practice is problematic. While there can be no doubt that professional forms of “sacred” knowledge acquire their conceptual potency through a demonstration of relevance to contexts (Muller 2009), valuable forms of conceptuality are only guaranteed through social processes that recognise the fallibility and emergent nature of knowledge and take account of previous conceptual development (Young

and Muller 2007, 2013). Engagement with the contextuality of practice is therefore vital for the development of the professional knowledge base, but this should not result in the assertion that it is only immediate contexts that stimulate the development of professional expertise.

While the recent work of Young and Muller (2014) has focused on the notion of “the profession”, it can be argued that such arguments have relevance to all occupations. While there may be something distinctive about those occupations ascribed with the ‘professional’ tag, all occupations are subject in varying degrees to similar pressures to perform work of a high standard and to iterate their knowledge base to take account of the changing topography of practice. Additionally, it is erroneous to consider any occupation completely in isolation, as the work of Abbott (1988) acutely demonstrates; occupations relate to each other within the context of industrial sectors in the ever-changing world of work. The development of forms of expertise that enable workers to execute tasks successfully in the wide variety of contexts that they may encounter within their practice is thus a concern for all occupations, whether they be considered vocational, professional or otherwise. Winch (2010, pp. 164–165) identifies the importance of “systematic propositional knowledge” for technical occupations. While many of those occupations classed as “technical” may not enjoy extensive discretion in practice, technical work does rely on a capacity to make use of, and infer from, the body of knowledge underpinning the occupation. Practitioners in skilled technical occupations, such as electricians or plumbers, may need to be able to “work out a plan of action” (Winch 2010, p. 166) to manage new contexts, taking account of specific conditions and constraints, and based on constructs derived from the collective experiences of those engaged in the occupation. It can therefore be argued that any occupational preparation that neglects a sound conceptual foundation is flawed. The inevitability of organisational and technological change in the world of work necessitates that practitioners of a given occupation have the conceptual resources to rethink their practice in unforeseen contexts. Concomitantly it can be argued that a foundation of core subject knowledge (i.e. such as that offered by Maths or Science), not related specifically to a given occupation, is a prerequisite for a successful working life, as it enables new occupational knowledge, often presaged on this purer disciplinary base, to be more easily and completely acquired.

The focus on both the sociality and the structure of knowledge implied by the work of Young and Muller (2014) and Bernstein (2000) invites scrutiny of knowledge recontextualisation, which can be described as the processes by which knowledge is selected, appropriated and transformed as it moves between different contexts to perform new functions (Bernstein 2000; Barnett 2006). Processes of recontextualisation may be socio-historically constructed, iterated, reviewed or radically reformed in accordance with the dynamics of given vocations, by policy initiatives or macro-economic change, and by the structures and types of knowledge foregrounded in vocational practice (Hordern 2014a). Vocational knowledge may thus be shaped by the priorities of supra-national or national bodies, the cultures of professions or vocations, and by the relations between influential organisations, such as employers, professional associations, and educational institutions. As part of an effort to develop an adequate lens to interpret aspects of these dynamics, and to understand the concomitant impact on the nature of vocational knowledge, this

paper aims to discuss and illustrate the use of the Bernsteinian concept of a ‘region’ as a socio-epistemic entity (Bernstein 2000; Muller 2009) into which knowledge is recontextualised from disciplinary sources in accordance with the ‘technological and organisational problems’ of practice (Barnett 2006). In so doing, the paper also concentrates on an element of the ‘work’ of a region that could be considered particularly significant, that of the nature of the ‘re-contextualisation capability’ that a given region accrues. While it is possible to conceive this capability at a variety of ‘levels’ or in relation to various activities (i.e. knowledge production, validation, curriculum, pedagogy, in workplaces, and by learners), issues of ascribing knowledge with validity and curriculum development are primarily foregrounded here. Recontextualisation capability is seen as multi-faceted, connected as much to the strength and quality of the relations between significant organisations and institutions as to attaining a sufficient consensus on what characterises apposite knowledge for practitioners of that vocation or profession.

To ground the discussion, illustrations of regions and aspects of their recontextualisation capability are provided from recent research into the development of higher apprenticeships in England from 2012 to 2014 (Hordern 2015), with a particular focus on higher apprenticeships at levels four and five in Project Management, Human Resource Management (HRM), Construction and Engineering. The projects to develop new higher apprenticeships funded by the Coalition government in England provide interesting examples, particularly as they were often tasked with bringing together a diverse range of key stakeholders within their ‘regions’ to agree new apprenticeship frameworks containing knowledge and competence qualifications. Those involved in developing these apprenticeships, primarily professional associations or employer representative bodies, drew to differing extents on the involvement of educational institutions to provide the knowledge base of the apprenticeships. They engaged employers in decisions about the structure of the apprenticeship in contrasting ways, and were operating within different structures of progression and recruitment. The examples serve to illustrate how processes within regions can be differentiated. Furthermore, comparative research into skill formation systems is utilised to begin to explicate how differing national contexts and policy-driven change may (re)orientate regions and their capacity to recontextualise, and articulate with transnational conceptions of professionalism. This serves to introduce a macro-level framework to understanding the nature of differences between regions.

2 The “Region” and the Constitution of Vocational Knowledge

The notion of the “region” emerges from the work of the sociologist Basil Bernstein and his discussion of the nature of knowledge in higher education and its relation to the “field of external practice” (Bernstein 2000, p. 52). Bernstein described regions as “the interface between discipline (singulars) and the technologies they make

possible”, providing examples from higher professional and vocational education such as “engineering, medicine, architecture” and “cognitive science, management, business studies, communications and media” (p. 52). The concept was further developed by Johan Muller, in a discussion of the development of professional and vocational knowledge and curricula, in which he suggests that the region is “comprised of a cluster of disciplines now come together to focus on a supervening purpose” (Muller 2009, p. 213). Crucially important for understanding these conceptions of regions, it can be argued, is the notion of knowledge differentiation, as developed in Bernstein’s (1999) distinction between vertical and horizontal discourses, with the “vertical” representing conceptual disciplinary or specialised knowledge forms and the horizontal discourse the knowledge of the “everyday”, or that which is “oral, local, context dependent” (p. 159). Arguably what is particularly distinctive about the “vertical forms” is their systematic organisation (Winch 2010), and the strength of their boundaries, which gives rise to specific procedures, processes and identities (Bernstein 2000).

The distinction between vertical and horizontal discourse is particularly critical because it is said that it is only the vertical discourse which provides the “rules” through which knowledge can be recontextualised for the purposes of practice (Bernstein 1999; Young 2006). This is because only vertical discourse provides a recognisable structure which provides each element of knowledge with a clear purpose and relation to other types of knowledge, a locus within a constellation of concepts, and a guideline for sequencing within the curriculum (Muller 2009; Young 2006). Vertical discourse can, importantly, be further differentiated between “hierarchical” and “horizontal” knowledge structures that represent different academic disciplines. Perhaps equally important for understanding the “region” is to place some scrutiny on what Bernstein (2000, p. 33) outlined as the “recontextualisation principle which selectively appropriates, relocates, refocuses and relates other discourses to constitute its own order”, in order to better understand the processes by which knowledge is “selected”, “appropriated” and “transformed” for occupational imperatives (Barnett 2006; Hordern 2014a). The region can thus be construed as a socio-epistemic entity, a space within which the knowledge base of a profession or vocation is assembled and struggled over by various actors and agencies, where forms of knowledge are treated with varying degrees of acknowledgement of their epistemic structure, and where recontextualisation is undertaken in its various forms.

Barnett (2006), writing within a Bernsteinian framework, has provided an outline of recontextualisation processes for vocational knowledge. Although his work does not specifically develop the connection with the notion of the “region”, what he outlines can be considered to be representative of key processes undertaken within a region. Barnett (2006) describes a process whereby “disciplinary knowledge” is brought into relation with the “organisational and technological problems” of practice, and then adapted and transformed through “reclassificatory recontextualisation” so that a “toolbox of applicable knowledge” is developed which can then form the basis for a vocational curriculum (pp. 146–147). This knowledge then undergoes a second transformation, a pedagogic recontextualisation as it is adapted

within classrooms and workplaces within a vocational pedagogy (p. 147). Barnett's analysis draws attention to the potential for multiple processes of recontextualisation as knowledge is taken through curriculum, pedagogy, and workplaces, to eventually be made sense of by learners. Thus, as Guile (2010) outlines and Evans et al. (2010) demonstrate, recontextualisation is multi-faceted and multidimensional. It also involves multiple actors and agencies, with differing combinations of actors and agencies coming together to influence and enact recontextualisation processes (Hordern 2014a). While recontextualisation may have different character as the knowledge base is assembled, curriculum developed and pedagogy enacted, it is also possible for different internal relations within the region to have particular bearing on different elements of a recontextualisation process, in other words the "selection", "adaption" and "transformation" of knowledge (Hordern 2014a). The potential for the misreading of knowledge structure and "errors of recontextualisation" (Hordern 2014a, p. 35) occurring can, it could be argued, be exacerbated where different agencies with different objectives are involved in each element of a given recontextualisation process. This problematisation of the work of the region suggests the scrutiny of internal relations is fundamental to the understanding of vocational curriculum and vocational pedagogy, and particularly its knowledge content.

3 Internal and External Relations of Regions

Turning to illustrative examples, research into higher apprenticeships in England between 2012 and 2014 (Hordern 2015) demonstrates the contrasting internal relations that can be found in regions, and the consequences this can have for curriculum development. In the regions of HRM and project management, the development of higher apprenticeships was primarily led by professional associations, who engaged with multiple employers in an attempt to achieve consensus around the structure of the apprenticeship and the content of qualifications. The involvement of educational institutions was very limited, and the qualifications emerging from the process were strongly practice-orientated with minimal abstract and conceptual knowledge content with links to disciplinary origins. This perhaps reflects the nature of project management and HRM practice, with a strong focus on application and practice effectiveness. It may also reflect the cross-sectorial nature of these professionalising occupations, and their ongoing struggle to assert themselves in a corporate world where market competition allocates value and shapes professionalism. The development of a "toolbox of applicable knowledge" (Barnett 2006, p. 147) requires strong validation from employers, but the necessity to engage employers across sectors makes establishing this validation problematic, often resulting in the professional association taking greater unilateral control over establishing the knowledge base. Contrastingly, projects to develop higher apprenticeships in the engineering and construction areas were primarily led by networks of educational institutions, working in collaboration with employer representative bodies who, in

turn, were involved in long established networks of employers. There is evidence of stronger and more stable internal relations in these regions, based upon the ongoing need for connections with a disciplinary knowledge base and patterns of practitioner formation that involve educational institutions and workplaces in partnership (Hordern 2015). The foundational elements of the “toolbox of applicable knowledge” are more clearly and consensually defined where construction or engineering are concerned; a facet of the more hierarchical nature of the knowledge structures that underpin the knowledge base and provide clearer recontextualisation rules for curriculum design.

While “internal” relations between agencies and institutions concerned with the occupation are important for understanding knowledge and curriculum in the region, it is also important to consider how the region has developed over time, how it relates to other regions and to underpinning disciplines, and how the occupation is affected by social, political and technological change. In other words, we need to consider the “external” relations and socio-historical context of the region. It can be argued that how forms of knowledge have been valued within a region over time and the traditions that shape particular occupations have considerable influence over what is considered valid knowledge, curriculum and pedagogy for that occupation. Occupations always exist in relation to other occupations, and are often engaged in jurisdictional struggles for control over work (Abbott 1988), or engaged collaboratively on tasks that require multiple contributions. In the case of the higher apprenticeships discussed earlier, numerous construction related “regions” such as those relating to Architecture, Building Surveying or Construction Management can be said to be strongly interconnected and affected by changes in each other’s knowledge base and professional and vocational formation structures. Equally, these “cognate” “proximate” regions (Hordern 2014b), members of the same industrial sector, draw on similar disciplinary knowledge structures from the mathematical and physical sciences, recontextualising these for the ongoing needs of the profession. Figure 23.1 below outlines some potential external influences on the character of regions.

In the case of project management or HRM, however, “proximate” relations to other regions are less perceptible (Hordern 2014b), as these emerging professions have less stability and cognancy in their relations with other occupations. Both could be said to have much in common with other “corporate” professions (Muzio et al. 2011) in the valorising of “professional service standards”, “capabilities” and “industry experience” (p. 446) rather than a formal knowledge base, borne of a need to be responsive to changing market conditions. Project Management and HRM knowledge may well be valuable, but there is a greater risk that particular techniques and fads that have dubious value and utility become prominent in these types of regions. This is because such regions are more distant from the social conditions and “arbitration” of knowledge value that define disciplinarity (Bernstein 2000; Muller 2009; Hamilton 2012).



Fig. 23.1 Some potential ‘External’ influences on the character of regions (Source: author’s own compilation)

4 Regions and the Political Economy of Skill

At the “macro” level, skill formation in professional and vocational occupations can be seen to be influenced by national context. It can be argued, for example, that the social, cultural and economic context of Anglosphere nations such as England or Australia has had considerable influence over the legal and institutional infrastructure underpinning professional and vocational formation. This has engendered a form of “voluntarism” that limits the demand for certain skills and, arguably, reduces pressures to formally regulate occupations (Ashton et al. 2000). This can be contrasted with guarantors of occupational status that exist in many countries associated with a more “corporatist” or “social democratic” models in continental Europe, and also with “state-driven” models where governments may have a greater role in stimulating demand for vocational skill and occupational development (Ashton et al. 2000).

Studies of built environment occupations provide useful illustrations of how this institutional infrastructure translates into occupational formation. Brockmann et al. (2010, pp. 113–114) demonstrate how apprenticeships for bricklayers in Germany, France and Scandinavia “are comprehensive and represent wide-ranging occupational capacity” within the context of a “regulated programme” that is a “important precondition for labour market entry”, while those in England are based on a “narrow

specialisation” and are “dominated by high-levels of informal on-the-job learning”, “accreditation of existing skills” and “narrow sets of activities ...not linked to a curriculum” (p. 114). Essentially, in England, entry requirements for the occupation are much more flexible, anyone can start bricklaying work if they can demonstrate that they can perform a few key tasks to a prospective employer. In the same vein, there are no specific requirements for a particular licence to practice in England for occupations such as estate agency, surveying and construction management, even though in reality many practitioners in these fields are accredited by organisations like the Royal Institute of Chartered Surveyors (RICS). This contrasts with Germany or Switzerland, where formalised state and social partner involvement is underpinned by a legislative framework and licence to practice arrangements (Ashton et al. 2000). In nations where strong government-led strategies have been developed with the aim of re-orientating the economy towards higher skill levels, professional and vocational formation may be rapidly changing, and there may also be significant elements of “borrowing” and recontextualising of vocational education training systems from other nations (Barabasch et al. 2009).

But how does this relate to the notion of the region? While the political economy of skill formation in the nation state undeniably has considerable influence in shaping the socio-economic and policy context in which regions exist, this cannot be said to determine how regions operate. There are transnational notions of acceptable work practices and identities embedded in professional networks that transcend to some extent the vagaries of national context (Faulconbridge and Muzio 2012), and may therefore shape the nature of the regions of those occupations. Professional associations operating across national boundaries, in addition to transnational partnerships between employers and educational institutions, could therefore play a key role in creating isomorphism in regions in differing countries. Thus, for example, standards of engineering or construction practice regulated by national and international professional and trade associations but shaped also by the changing context of engineering and construction work, may be adapted in-step with each other across national boundaries irrespective of the political economy of an individual nation state.

5 Recontextualisation Capability: Conditions and Conundrums

The nature of recontextualisation in operation within a region is, taking account of the discussion above, fundamental for understanding the character of vocational knowledge. Recontextualisation, or the selection, appropriation and transformation of knowledge, can be explored socially and epistemically. Crucially, from the perspective outlined in this paper, knowledge must be seen as “differentiated” (Young 2006; Muller 2009), with particular types of knowledge belonging to specific knowledge structures that have particular characteristics. Thus the “hierarchical”

knowledge structure of physics, where the knowledge base develops through an integration of propositions into ever greater abstraction that is governed by the existing disciplinary structure and processes (Muller 2009), implies recontextualisation rules that have implications for how knowledge is transformed for its use in technical professions such as engineering. In other words, in terms of curriculum, the structure of physics guides the structuring of fundamental elements of engineering knowledge in the curriculum. The existence of particular forms of epistemic structure, but yet the reliance on actors and agents to select, appropriate and transform knowledge for a vocational knowledge base and curriculum, suggests the possibility of “errors of recontextualisation” (Hordern 2014a, p. 35). These can come about when those actors and agents involved in the region fail to recognise the particular nature of a particular concept, how it is both located in a web of concepts relating to that occupation, and the nature of its relevance to the vocational practice (Muller 2009; Hordern 2014a). The potential for errors also suggests that recontextualisation can be qualitatively evaluated, in respect both of technical and scientific occupations, and also in terms of those occupations that make use of a knowledge base derived partially from the social sciences.

It can be argued that a particular prevalent type of error can be found in the recontextualisation of professional knowledge where links exist with disciplines that Bernstein (1999) termed “horizontal knowledge structures” within vertical discourse. These knowledge structures consist of “specialised languages and specialised modes of interrogation” (1999, p. 162) that offer differing ways of interpreting the world within certain boundaries, and thus are distinct from more “hierarchical” structures such as those of the physical sciences, which are characterised by “integrating propositions” (p. 162) and a unified language. A typical horizontal knowledge structure might be that of sociology, where multiple theoretical perspectives or traditions exist to explain social phenomena, each forming a “language” used by a group of adherents. A competent sociologist, while perhaps ascribing to a particular theoretical language, will be familiar at least with the existence and fundamental tenets of other prominent “languages” within the discipline. She will not make the mistake of assuming that her “language” is the only provider of “answers” to the “problems” posed by the discipline. Aspects of sociology are selected, appropriated and transformed by those involved in constituting a knowledge base for the “regions” of many managerial, administrative and welfare occupations, including HRM, teaching and social work. The recontextualisation of this knowledge is undertaken with the purposes of practice, however defined, in mind, and as this occurs a space is opened up “in which ideology can play” (Bernstein 2000, p. 32). The potential for “selectivity” may mean that certain languages from the contributing discipline (i.e. Sociology) are preferred by dominant actors within the region, perhaps for ideological reasons or to give authority to their claims for the professional knowledge base.

So, for example, those recontextualising knowledge for the HRM or general management curriculum may prefer to accentuate functionalist models of social organisation, or behaviourist psychological models, or “borrow” certain sociological theories for application to management problems without reference to their disciplinary origins or original purpose (Oswick et al. 2011). The HRM higher

apprenticeship discussed earlier includes some content that draws on theoretical constructs, but accentuates that which demonstrates the impact HRM can make in business contexts (Hordern 2015). Time constraints within the qualification structures in the apprenticeship mean that only a limited quantity of content can be selected, and inevitably there is pressure to make this as obviously relevant to practice as possible. The important wider point is that the recontextualisation process re-shapes and transforms the original disciplinary knowledge, and inherent in this is the risk that the nature of the knowledge structure is occluded. What is but one of a number of languages may attain a degree of prominence in the knowledge base of the “region” of the occupation that is not representative of its locus within its original disciplinary context.

In a similar vein to the examples above, the selectivity inherent in a recontextualisation process leaves the potential for concepts with origins in contributory disciplines to be included within a professional or vocational curriculum without the opportunity for these concepts to be fully located within a wider spectrum of concepts. These points towards the importance of a set of key concepts underpinning vocational practice to be developed that can be located clearly in relation to each other and any contributory disciplinary concepts. It can be argued that this cannot be achieved without clarity over the “organisational and technological problems” of practice (Barnett 2006). However, the social processes of defining the “problems” of practice may be influenced by various imbalances in the internal relations within the region, with governments, dominant agencies, employers or educational institutions having particular bearing on how problems are conceived, with the result that recontextualisation proceeds in accordance with their perspective on those problems. Equally, “problems” may be changing rapidly through organisational and technological change. Recontextualisation arguably needs to keep pace with these changes and to register the extent to which the changes have significance for the knowledge base and what constitutes the vocational curriculum. Such a challenge necessitates the ongoing gathering of intelligence about the nature of practice, and the use of this information for problem definition. In professions and vocations where practice is diverse or reaches across many types of organisation and sector, the gathering of useful intelligence and the definition of key problems may be highly problematic.

Winch’s (2010) discussion of the importance of a “normative basis” to vocational knowledge provides some insight into the nature of recontextualisation capability. Winch writes that “mastery” of a vocational practice is demonstrated through “facility with the normative structure that constitutes it” (p. 80), or in other words “understanding what it is to participate in the typical normative activities” (p. 80) that constitute a practice. Thus, key activities such as “habituation, training, instruction, correction, explanation, interpretation and justification” (p. 80) are “norm-governed” (p. 87), and participation within these activities, and awareness of the “norms” that govern them, in addition to the “purposes” of the occupational practice and the “constraints” within which that practice is bounded, are essential for the development of “know-how” appropriate to that occupation. It is only if these normative activities are purposeful and well-defined, and made available to new and

existing practitioners through curriculum, pedagogy and workplace activity, that vocational practice can be sustained. Arguably, following Young and Muller (2014), these normative activities should support the differentiation and iteration of conceptual resources that practitioners can make use of as they manage, and act within, the contexts of their work. For the analysis of recontextualisation capability this has particular significance, as one can ask to what extent a “region” conserves and sustains the “normative activities” that constitute the occupation, the extent to which these normative activities enable the differentiation of useful knowledge for practice, and whether therefore actors within the region are able to select, appropriate and transform knowledge for practice purposes. Without a clear sense of the norms that relate to the occupation, and how practitioners can engage with the knowledge base and its ongoing pedagogisation, then it is difficult to see how recontextualisation can operate.

6 Evaluating Recontextualisation Capability

The potential for ‘qualitative evaluation’ of recontextualisation indicated by the differentiated structure of knowledge and the different ways in which it can be selected, appropriated and transformed suggests that the recontextualisation ‘capability’ of a given region can be evaluated. The capability of each region can be assessed in terms of (at least) the following categories:

1. Capacity of actors and agencies to recognise the structure of knowledge recontextualised to the region.
2. Whether actors and agencies are able to develop the forms of “sociality” and procedural “know-how” within the region that can successfully iterate, revise and agree the knowledge base in accordance with notions of knowledge fallibility and emergence (Young and Muller 2013, 2014), so that a normative basis for vocational practice (Winch 2010) is sustained.
3. Capacity of actors and agencies to ‘inferentially’ relate concepts developed specific for vocational practice to each other and to any contributory disciplinary concepts.
4. Capacity of actors and agencies to define the problems of practice in ways that can identify and produce requisite knowledge that can provide insight into or ‘solve’ those problems.
5. Capacity of actors and agencies to comprehend and gather ‘intelligence’ on the varied contexts of practice.

It can be suggested also that recontextualisation ‘capability’ benefits from the opportunity for actors and agencies within the region to develop strong and mutually beneficial internal relations, perhaps without having to endure constant policy-related change in the environment affecting the region. There is evidence from England of some of the difficulties for vocational education of constant political attention and interference, and systemic fragmentation (Coffield 2007). It has

proved very difficult in England to develop and sustain school and college based vocational pathways for 14–19 year olds for example (Issacs 2013), and promising initiatives have often been undermined by changes in government or political imperatives (Coffield 2007). Where certain objectives are “set” for vocational education by politicians as part of a belief in the need of “supply side” reform of skills provision, then interference may be ongoing, and endless “tinkering” with the infrastructure in the vain hope that the next reform will provide the answer to perceived problems (Keep 2006). Of course, the role of the state can also be benign, although this can perhaps be better perceived as a consequence of close collaboration and agreed division of competences between employers, educational institutions, professional associations and government, sometimes also enshrined in legislation. It could be argued, therefore, that the depoliticisation of vocational education, or at least a clear and consistent role for government, may help foster forms of recontextualisation that better support the development of vocational curriculum, pedagogy and practice.

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Chapter 24

International Technical and Vocational Education and Training (TVET) Transfer Project – Theoretical-Practical Experiences of Workplace Training with the Workforce in the Egyptian Construction Industry

Stefan Wolf

Abstract The Water-Energy-Building – Training and Transfer (WEB-TT) project was funded since the beginning of 2011 for a three-year period. The main goal was to develop appropriate training modules for the Egyptian construction industries. The project WEB-TT focused on the improvement of the highest level of construction workers not on qualification of engineers. For the different ends of this improvement, adapted training measures need to be formulated. Their formulation in turn requires an exact knowledge of the present demand for training measures by the management of the company and the environment in which the measurements will be embedded. The concepts of training transferred from Germany to Egypt would be adapted to the different context of the Egyptian side. Therefore, and because of the specific circumstances of the project starting at similar times with the Egyptian revolution in the Arabian spring specific theoretical approaches of understand the policy transfer process in TVET. The theoretical concepts are explained and reflected on the experiences of the practical transfer project. The results of the successful transfer project WEB-TT were illustrated and with the conclusion further research needs to better understanding of the process of policy transfer in TVET were outlined.

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1 Introduction

The here presented article focuses on a policy transfer project in TVET between Germany and Egypt in the field of building and construction between 2011 and 2014. It will show the utilisation of a basic theoretical understanding of the intertwining between culture and the TVET systems of a given society to shape properly the policy transfer in TVET between two countries. To some extent the Research & Development (R&D) project WEB-TT is to understand as a proving in the field of the concept of work culture to refine the stages of policy borrowing in education of Phillips and Ochs. Besides, the concept of work culture was similar used as a heuristic toolkit to better understand to what and to how the Egyptian TVET system operates related to the situation of the construction industry specifically our Egyptian partner company Orascom Construction Industries (OCI). The three year cooperating project in TVET WEB-TT between Egyptian and German partners give the experiential background of the article. The R&D project was able to develop successful results of in-company training activities to improve the quality of site workers in Egyptian private construction companies. We were obliged to work in an open design approach due to the troubles and constraints of the Arabian spring and the Egyptian revolution with the overthrow of the Mubarak military government at the beginning of our cooperation project in 2011. A factor of success was the suitable use of theoretical approaches to shape the process and to gain light on the very different regulations and structure of TVET in Egypt as a reference to our transfer activities from Germany. First the article will show the used theoretical concept with hints to our experiences in the project WEB-TT. After this theoretical focus we change the description to the practical experiences of the WEB-TT project and the results we could deliver after the 3 year period. The conclusion finalised the article with a short prospect to further research need referring to our experiences in policy transfer to Egypt.

2 Theoretical Fundamentals and Resuming Theoretical Approach Extended

The below more detailed described project WEB-TT and its success founded on a theoretical approach called work culture to clarify the societal environment of the TVET system in Egypt. But in general the main theoretical assumption was a widespread understanding that the workforce qualification regulations exists in close interrelations with the societal environments of a given society. This societal environment of qualification is understandable with an approach that culture is as an expression of dynamic results of actor's activities in contested social fields (Wolf 2010c). In contrast to common culturalist reductions, this approach understands culture as a dynamic social process, a process in which social actors in a highly competitive social arena of negotiation compete in order to secure a position in

society. To guarantee a capacity of social governance, social actors are required to interpret and process external influences, both material and cultural, individual and collective. If necessary, external influences are newly formulated, provided that there is progress of social processes. Here, social actors create new systems of meaning, a new symbolic order or also an innovative individual style. A number of scholars have described this mechanism of re-formulating cultural meanings (Auslander 2008; Çağlar 1995; Hobsbawm and Ranger 2003). Based on this dynamic understanding of culture the scientific responsible persons of the WEB-TT project has used two more operative suitable assumptions of the interrelations of culture and TVET specifically in the policy transfer process.

First, on a higher level towards society the work culture approach (Wolf 2011) with its six dimensions to attend to policy transfer activities in TVET (Barabasch and Wolf 2011; Wolf 2010c). Additional to shape the appropriate training activities we need on the mid-level an approach called cultural factors of influence on vocational training with its four categories of bundle of factors (Wolf 2010a, b). Here is not the place to detail the two approaches but the article will focus on the work culture and its placement in a general theoretical understanding of policy transfer processes (more detailed information about the results of work culture analysis in Egypt see Wolf 2013a, 2014).

2.1 The Stages of Policy Borrowing in Education

To understand the complex activities of policy transfer in education David Phillips and Kimberly Ochs offer a clear concept to analyse the processing of transfer educational policies from one country to another. They start their concept with the question of what can be transferred under what condition. The process of transferring policies starts regularly with the cross-national attraction. Starting point in a given society is very often an inner-state impulse to change things in the educational system as a precondition of the transfer process e.g. the large debates after the first PISA study results in Germany and the released changes (Ertl 2006). But only some impulses can be successful start a borrowing process of educational policies. The impulses must address aspects

of educational policies and practices that can be borrowed and which we here define as illustrating the range of 'externalising potential' in the target country. (Phillips and Ochs 2003, p. 453)

The attraction of external elements in the policy transfer depends on six foci of educational policy development and is related to them (Ochs and Phillips 2002, pp. 329 f.).

Any successful transfer activities have to refer to these six foci respectively the borrowed elements will be to some extent part of the foci of educational policy development. However, taking into account need the embeddedness of policies transfer. The process and the shaping of the transfer cannot developed independently

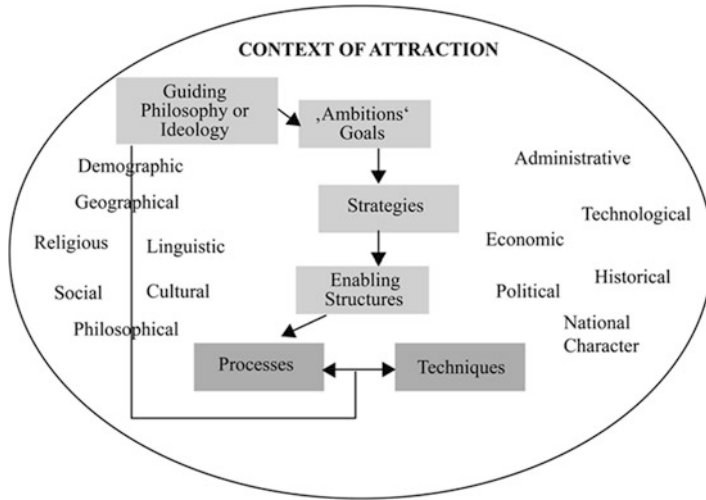


Fig. 24.1 Elements of externalizing potentials and the context of cross-national attraction (Source: Phillips and Ochs 2003. With permission of Phillips)

or without reference to the contextual factors show in Fig. 24.1. With the concept of work culture pointed out briefly above we can precise the more general named context in the approach of Philips and Ochs for TVET transfer activities. But before a deeper explanation is given the concept of stages of policy borrowing in education first will follow.

In their analytic approach, Phillips and Ochs continue with the “How” of the process. In this second step, the decision stage, many measures are focused with which government or other agencies attempts to start the policy transfer. Base of these activities are the outcomes of the previous step of cross-national attraction. The four illustrative descriptors (theoretical, phoney, realistic, quick fix) of “How of the decision doing” are derived from an analysis of the activity of political actors. The case of the R&D project WEB-TT shows however that integrating other social actors or stakeholder in the process of policy transfer in education e.g. the management staff, the engineers as a representative of the academic workforce in the private company and the foremen as workers’ representatives is needed. This will lead us to different activities and will give us more descriptors that are illustrative in the decision-making step. The third step of the policy transfer process means the stage of implementation. Depending from a large number of contextual factors the possibilities of adaptation of the foreign elements to the borrower system and the role and the attitude of significant actors in the process will lead to support or to resistance of the implementation activities to some extent. If resistance is articulated, the implementation will stop and the borrowing become to an end. Very often, the resistance is not transparent. It faces blockage to subvert the process with inaction, delaying tactics or non-decision. The last step of the process, the stage of internalisation respectively indigenisation, brings the transferred policy to become part of

the indigenous education system. To deeper understand and to analyse this stage Phillips and Ochs differentiate it in four steps, impact on existing system, the absorption of external features, the synthesis and the evaluation at the end of the process, so it will – depending on the results of the evaluation – restart the whole process (Phillips and Ochs 2003).

As already becomes clear, the process of policy transfer is very complex and not easy to decipher by using the here just refereed tool of Phillips and Ochs. In addition, the exploration of policy transfers has to consider and also to examine the aforementioned wide varieties of political and social context factors of both lender and the borrower society. The existing publications of the transfer of policies in education and in TVET in selected countries show that the systematic comparison has to take into account a high complexity (see additionally e.g. Dolowitz and Marsh 1996, 2000; Rappleye 2006). The model of four stages to analyse the process of policy transfer in education will facilitate the research and give helpful advice for practical issues in TVET transfer processes (Phillips and Ochs 2004; Phillips and Schweisfurth 2006). They give an orientation building categories of “Why” (reasons), “What for” (impacts), “How” (structure of the process). This orientation gives a first step to understand policy transfer in TVET. A successful shape of a policy transfer in TVET to some extent need deeper understanding, particularly to the context in which the ‘TVET things’ are embedded. The actors involved in the process e.g. a transfer process shaping consultative scientist need to know the interests of both sides, as well as cultural practices and motives for adopting the policies (Tanaka 2005). A successful policy transfer will happen if both sides (lender and borrower) equally have consented in the transfer (disclosure of knowledge – recording and processing of knowledge) and agreed to it.

The respect to the context is the core issue. Phillis and Ochs differ the context in five driving factors that influence at different level the stages of policy borrowing (Fig. 24.2). (1) The forces of context that catalyst the process of borrowing by starting the search for foreign examples of better education driven by cross-national attraction. The sputnik shock in the late 1950th is one of the related example for such catalyst contextual force (Phillips and Ochs 2003, p. 457 f.). (2) The forces of context that affect the motives for attraction e.g. the decision of implementing features of colonial schooling to serve the colonial interests in the early twentieth century (Adick 1993; Eckert 2005; Johnson 2006). (3) The decision stage could also be affected by contextual forces e.g. the timing of re-elections in a country. The accidental resigning of a key player of the borrowing process as it happened during the R&D project WEB-TT is also a corresponding illustration of the forces of context. One other example from the experiences of WEB-TT shows it deeper. The decision to continue to work under a complete open concept after the failure of the starting project concept due to the Egyptian revolution from the spring 2011 and to develop frankly a new and unknown training concepts to fit the different needs of societal environment in Egypt and the need of the company was strongly influenced by context forces. The training centre of German crafts – part of the WEB-TT consortium – could see that their daily work of inter-company training activities will fit to some extent to the unknown environment. In the German legal regulation of

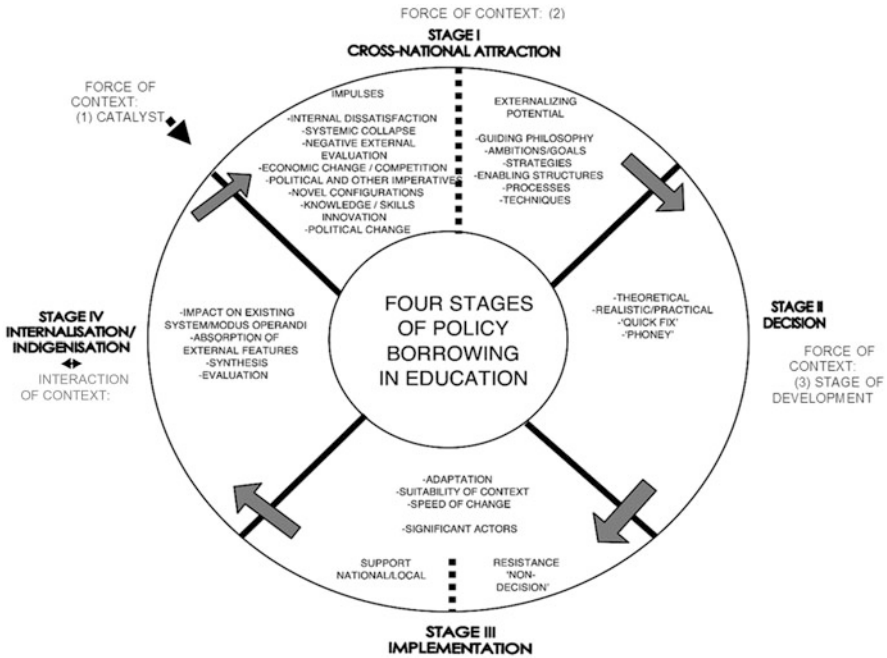


Fig. 24.2 Stages of policy transfer in education and contextual factors in process (Source: Phillips and Ochs 2003. With permission of Phillips.)

in-company training of the Dual apprenticeship system we could find some similarities to skills based training in Egypt and also to the existing Egyptian Vocational Qualification frames (Wolf 2012a). (4) Also in the stage of implementation the contextual interaction and affection of forces of context we have to consider in both countries and to reflect it clearly. In the here referred WEB-TT project we were obliged to consider the different contexts in Germany and in Egypt towards a concept of structural modularising of technical training. In Egypt it will fit excellent to the common understanding if we decide to shape our training activities into small pieces of modularised training and to deliver certificates for the training activities to the participants, but from a German perspective, the delivering of certificates of modularised small scale training activities is a very contested field and restricted under a perspective of German legal regulation under the responsibility of the concerned body as nominated in the Vocational Training Act (“Berufsbildungsgesetz” BBiG) and Crafts Code (“Handwerksordnung” HwO). (5) In the last stage of the cycle of process of policy borrowing in education too, we have addressed the issues of affecting from interaction of context. To clarify the idea what could be meant e.g. after our practical experiences in Egypt today we stated that the internalisation of our training concept we have developed together with the Egyptian partner OCI was successful done by the Egyptian side but not in our understanding of proper internalisation. We understand that we will internalise a close concept of training,

certification and quality assurance with clear regulations to be able to deliver the “Training-made-in-Germany” quality. The Egyptians use their new experiences and capacities with trained staff – the internal called master-trainers with German certificates of the pilot courses delivered by WEB-TT – to produce their own results by continue train in-company-trainers by the master trainers and deliver specific in-company certificates of OCI to the newly in-company-trainers. But no additional monetary investment to improve the quality of the workforce was done during the process of internalisation. These issues of context we have to compare in both countries. This will engender some difficulties because the foreign background of TVET is not simple to understand and to grasp. The like of the home system is often much easier to perform. But what we also need more cross-discipline approaches to understand better the inner-dynamics of the different stages. So we need to enlighten the role of different actors and their interests in the decision making stage, by any means the main subject of political economy (Busemeyer and Trampusch 2011; Thelen 2004).

Reflecting this above described concept to analyse policy transfer processes in education on the background of our experiences in Egypt we confirm the state of importance of the contextual factors. However, the more general assumption in the approach of Phillips and Ochs that context matters need to refine and to precise for analyses in TVET transfers. We have done it and developed the concept of work culture as a clarification of the context of a specific TVET system in a country. It based on a long-standing discourse in the German academic TVET pedagogics (Deissinger 2008; Georg 1997b; Greinert 1999, 2004b; Wolf 2009). It will give us an approach to compare and understand the foreign TVET regulation and more clearly delimit the cultural context factors. In the R&D project WEB-TT in Egypt we have used it as an analytic toolkit with a strong heuristic function to become to a better understanding of the foreign context of our policy transfer activities.

2.2 The Concept of Work Culture as a Background of TVET

The concept brings light in the symbolic structures of order and the system of cultural meaning of a society at the interchange with vocational education and training. Starting from a cursory remark from Greinert on important features of work culture of German vocational education, the next section will break down and complement the essential interrelations between economic activities and vocational education (Greinert 2007, pp. 161 ff.). As at other places already mentioned (Barabach and Wolf 2011; Wolf 2009, 2010a), vocational education or training interrelates with other social areas of society. It is important in terms of social education and in the production of goods and services. For the purpose of this paper, we will focus here on the latter and the economy’s impact on cultural mechanisms and the interrelationship with vocational education (Georg 1997a; Greinert 2004a). The impact of a system of cultural meaning on a business or company and its related regulatory patterns are closely linked to the vocational education system. The recruiting of the

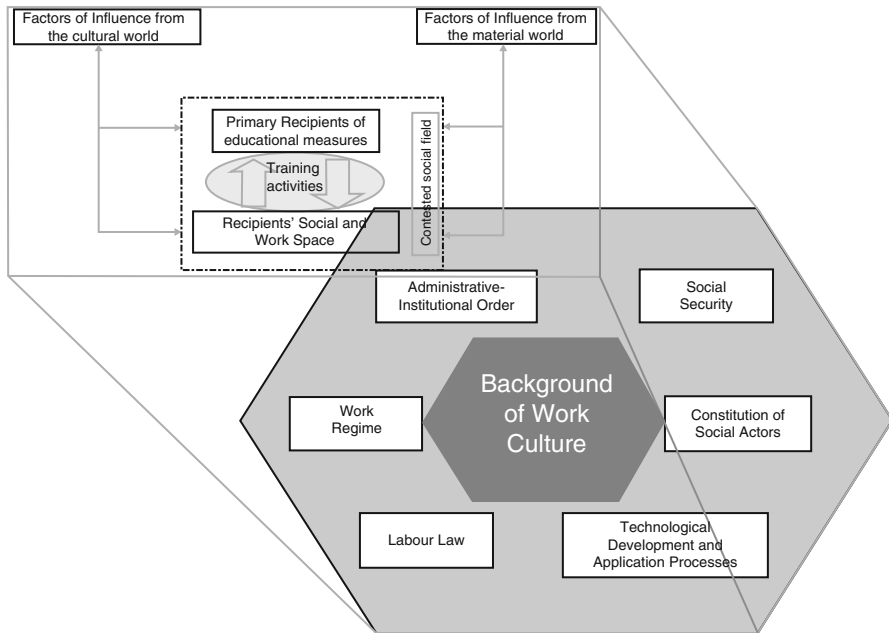


Fig. 24.3 Work culture as a background of TVET (Source: author’s own compilation)

work force is also affected and at the same time, the differences of the TVET system cause/require other regulatory patters and forms of organisation in company action (Maurice et al. 1980; Regini 1997; Sorge 1995). This brings about changed forms of how work is organised that, in Germany, is characterised as dull and task-oriented and in France a strict hierarchy informs forms of organisation with extremely detailed task descriptions (Wolf 2009, pp. 97 ff.) (Fig. 24.3).

A similar interdependency/interrelation between cultural meanings and rules of the working world also apply to the labour law (Mückenberger 1998; Supiot and Mückenberger 2000). Law studies show that effective cultural systems of meaning, created by social actors, are the result of historical and social experience. According to Mückenberger, they accumulate in societal visions of guaranteed social security and freedom. While in England these rules are mediated by market relations, that is, freedom and social security are understood as unencumbered by the state, in France the state is the decisive authority. The state here guarantees the freedom of political articulation. In Germany, social security is a result of societal arrangements, whether it by in the sphere of free collective bargaining or in collective labour law. However, the emphasis on seeking agreements in the German labour market has also led to a loss of freedom since it is not achieved in discussions free of forms of state domination. Rather, these conversations occur under the authority of powerful state actors and lobbyists (Wolf 2009, p. 96 f.).

A further area that has relevance for vocational education is the production of development and application processes of new techniques and procedures. Workers

at the shop-floor level of the production regime are directly involved in these processes and need consequently a training to some extent to operate properly. Several scientific studies have revealed that the decision-making processes and the operational implementation are dependent on cultural meaning. This dependency is not rational. It is not objective but rather this is about a social interaction whose rules determine the behaviour of those participating (Hofstede 1980; Selznick 1949; Stinchcombe 1965). We can assume then that cultural patterns of interpretation take the lead in this process and prevail over rational expectations of an efficient process of organisation. Alongside this outcome of organisational sociology, the social science research on technology discovered that the development of new technical products are also subject to cultural rules. Here, it should not be assumed that the most favourable solution prevails, but rather the one that best complies with the social requirements of the field of negotiation for the technology developers (Dierkes and Knie 1989; Hard and Knie 2000; Lutz and Hirsch-Kreinsen 1987; Ruth 1995).

The question of central social actors who play a role in shaping relations of production needs to be clarified. It is important to distinguish between collective actors and individual social actors. From a German perspective, the powerful trade unions fall under the category of central collective actors and, historically, have played a primary role in shaping vocational education. These collective actors appear in a variety of shapes and forms, for example, in the state administration of the education ministry and programme models for vocational schooling or the traditional apprenticeship system in sub-Saharan Africa (Adam and Boehm 1994; Greinert 1999; Nübler et al. 2009). Identifying collective actors for a comparative analysis and clarifying their influence on shaping vocational education and training can provide inferences as to the outlook of vocational policy transfer. Alongside the collective actors, it is important to observe individual actors, their worlds, cultural systems of meaning, as well as their imaginations of a “good life” (Wolf 2009). Without going into detail, it is fair to say that, for a long time, the German dual apprenticeship model, with its gender-specific, male-dominated work biography, represented the norm (Baethge 2001; Hausen 1976). The individual subject is interrelated to vocational education by his/her socialisation, too (Lempert 2006). The training and succeeding professional activities have a powerful effect on the constitution of the self and identity (Deetz 2000; Krappmann 1983; Körzel 1987; Leithäuser 1986; Schönberger and Springer 2003).

A further category worth mentioning is one of social security; that is, how a society approaches its aging, sick, or those socially disadvantaged. On many levels, this category is entangled with the system of vocational education. At the institutional-structural level, the German social security system relies on professional training with permanent and full-time employment that undergirds the overall employment system. Therefore, social security has been designed around a dual vocational system and individuals can access social protection and chances for a stable social and economic position (Reif 1982). In contexts without these features of the labour and training market, an elaborate system of vocational education and training has a significantly lower importance. Instead, people are trained on the job or attend school full-time. The question relevant for a comparative analysis is

whether or not the elaborate form of vocational training is to an individual social actor's best advantage and whether or not imported aspects of vocational education and training would influence this category.

The last feature to mention is the administrative-institutional order taken up in the analysis of the context of such a transfer. The central issue here is who decides on the concrete arrangements of vocational education and which institutions are responsible. For example, in France, it is the National Ministry of Education; in Germany, the responsibility is scattered amongst federal and state-level bodies, including unions. In a large number of other countries, this stream of education is controlled by labour market mechanisms and vary in form from context to context. The three ideal types of administrative-institutional order can be found best described by Greinert (2000), to get a comparative overview to the different concepts to typologies the TVET systems in the world (Gonon 2013).

With the both noted theoretical concepts, the stages of policy borrowing in education and the additional refining of the context by the work culture approach, we have suitable tools to shape policy transfer project in TVET but with all respect to high complex undertaking to bring features of TVET from one society to any other. The two concepts show us the way to understand the process of transfer, the stages, and a kind of understanding the insights of the process, the work culture, used as a heuristic toolkit. But we remain working to a great extent in a status of uncertainty because the reality of TVET transfer is too much complex that a theory can solve all problems and misunderstandings but with the presented theoretical approaches we have a lighthouse in the fog of reality. How they can be used in policy transfer activities in TVET specifically between developed countries and developing ones, it will show now by the example of the already mentioned R&D-project WEB-TT.

3 The Policy Transfer Project Water-Energy-Building – Training and Transfer (WEB-TT)

Since 2008 the German federal government has implemented a new programme line for R&D projects in the TVET transfer activities of Germany (BMBF 2011). To improve the competitiveness of SME's in the training sectors under an external trade perspective the government funds innovative projects to facilitate the export of German's Vocational training programmes abroad. In this line the WEB-TT project has been funded since the beginning of 2011 for a three year time frame. Within the consortium three departments of the TU Berlin work together with a chamber of craft, training centres of the German crafts in construction and some supporting organisation for technology and knowledge transfer processes. For more information see www.web-tt.org. The main goal is to develop appropriate training modules for the Egyptian construction industries. In the WEB-TT project, the client requesting curricula and training programmes is a large Egyptian private sector construction company.

This private demand for German TVET curricula indicates a significant change in the commonly existing approaches within international cooperation in vocational training for the German side of the supply chain. On the one hand, the development of curricula has to be completed quickly. This essentially means the German trainers have to arrive with ready-made curricula. Because of the cultural specificity of the German VET-system, it is simply not possible. On the other hand, the curricula and training measures have to be adapted according to the needs and conditions of the client, without taking too much time for preliminary and development studies. Therefore, the German providers need research-based assistance that helps to solve the theory-practice-problems. Adaptation to the needs and conditions of the clients or the partners of VET-cooperation is a complex undertaking, which cannot be solved sufficiently by executing a standard business-like 'requirements catalogue of supply and demand' transaction. In the case of the WEB-TT project, the managers and engineers in charge from the Egyptian side want their construction sites to be more efficient. The quality of construction should rise, the building processes should be optimised, and the teaching period for untrained construction workers should be reduced by 20 %. To that end, specific training measures need to be formulated. Their formulation in turn requires an exact knowledge of the detailed demands for training measures by the management of the company. Because we've learned during our cooperation with the engineers and managers of the Egyptian company that a clear answer from their side of what kind of training they need will not be possible. The academic trained staff of any company in developing countries has usually no idea of intentional training activities for their workforce, skilled and semiskilled workers, and they have no tradition of doing such structured training. Under the perspective of our above noted theoretical concept we can now say that the existence of any customs and rules of doing any kind of training of under-academic staff will be a strong force of context to affect the implementation of training activities from abroad. In Egypt the in-company training activities follows usually the rules and regulations of informal training of the large traditional (informal) sector, specifically in the construction field with its strong informal organisational structure of the workers (Assaad 1993).

The project team develops a new concept to cope with the complex circumstances, and to create proper training measurements. The word demand does not solely mean the requirements of the company; it aligns itself also in two other directions. It means to take into account firstly the embedding of the training measures into the given local contexts, and secondly adaptation to the requirements of the participants in the qualifications programmes. We call this "three-partied demand orientation". On a higher theoretical level we call our concept "need approach" in which the use of different theoretical based assumptions and an entangled methodological procedure is integrated (Wolf 2012a, 2013b).

3.1 Goals and Approaches of Training Activities of the WEB-TT Project

Under the aegis of a project-team consisting of staff members of three institutes of the TU Berlin, and with a consortium of five other partners in collaboration with the Egyptian construction industry, technology-specific vocational training courses in package solutions should be developed, tested and marketed. In cooperation with internationally active, private Egyptian construction companies, concepts for qualifications at the executive level on the construction sites were being developed.

At the beginning of the project, the planned concept in the proposal and the first activities should develop a large training facilities near Cairo with a clear structure of transfer of German concepts of Vocational College with clear linkages to Egyptian companies, a well experienced concept of German public TVET cooperation over the last decades. But we start the project at similar times as the Arabian Spring with its deep political changes in Egypt. Therefore we were two times obliged to change the Egyptian partners until we could start our cooperation with OCI. The whole planning move towards an open concept and the project team of the German consortium have had to decide how and what to transfer to fit the interests of the private company. In this open situation the use of the above mentioned theoretical concept gave us the possibilities to shape successfully the project. One example will clarify the way. Following the concept of work culture we have had an understanding that for any extent a suitable transfer of German elements of TVET to Egypt need to refer to the work regime. Consequently, we were continuously searching during our different site visits to the how and whom of working together under what regulation and rules, which what kind of formal and informal hierarchy etc. (Wolf 2013a). So we could identify the beneficiary personnel for our training activities and understand the structure and rule of Egyptian construction work. In general we find a strong hierarchy on Egyptian construction sites, similar at the engineer level but also at the level of the workforce. The work teams are organised in three partied structure of a skilled, a semi-skilled worker and a hodman. The work organisation is divided in small sections, trades are smaller professions as in a German understanding of vocation. The workforce is supervised by foremen they headed the team of their own trades. One level up to the foremen we can find the supervisor who will chair different trades. Both of them have the right to advice changes in drawings and are the linkage between workforce and engineer corps. These workers are in reality the practical experienced personnel on-site but under the hierarchy of site-engineers mostly fresh graduates from universities. This tensional relation brings a lot of conflicts in the daily cooperation on site work. On the side of the workers the foremen and supervisors are responsible of recruitment and classification of new hired workers. On site work new workers are coming usually with a group of them under the auspices of a Raijes from one area to ask for working. The negotiation of hiring is between the Raijes and the foremen/supervisor. The workers are obliged to show their work performance by exemplary work task and the foremen decide if the concerned workers will get a classification as a skilled or semi-skilled worker or only

as a hodman. And they are responsible for the upskilling and the improvement of the quality of the workers. The foremen do this work duties based on their experiences of work and informal learning. They decide based on the Egyptian code of practice, with their common understanding what means good work under Egyptian conditions.

Based on the here sketched insights of the work regime and with a deeper understanding of the Egyptian TVET system lead by the work culture approach we have decided to train these personnel. The first project step plans to carry out further training for skilled professionals at the company executive level, the above mentioned foremen, (not the planning engineers), to become trainers in professional qualification programmes. To this end, it was necessary to develop adapted training activities to be able to conduct these goals successfully. This professional qualification was implemented in the form of training modules. These modules can be interpolated to each other so that training certificates, which are officially recognised by the German authorities, can be granted to the successful programme participants (Wolf 2012a, b; for more information see the web page: www.web-tt.org).

These training modules could be combined with innovative technologies to create a 'leverage-effect' which enables the German providers, especially the ones coming from the modern water and energy supply and construction technology sector, to gain access to the Egyptian market. At the same time, it makes it possible for the WEB-TT project to incorporate the training expertise of leading market players from the different fields of innovative technologies into the development of adapted vocational training modules. These modules are then converted into packages that can be used in other countries in the region after they have been tested. It is furthermore planned to develop a marketing strategy from the vocational training modules, using them as export packages to promote the international activities of the participating German training centres and to open up new business fields.

3.2 Activities to Identify the Needed Qualifications

As indicated above, due to the short time span of the prior phase for development studies, the first travels to Egypt to deepen contact with partners have served simultaneously as an opportunity for initial analysis of the situation of the construction site and the work processes. With the aid of German master-craftsmen coming from diverse construction trades, accompanied by vocational training academics, photographs have been taken, the construction work has been observed, and many expert-talks have been held with the managers and engineers of the construction company, covering a diverse array of questions about the development of adapted curricula. Later, these pictures were evaluated for the identification of specific qualification needs (Bohnsack 2008; Collier and Collier 2009). During our site visits we, the team members with a construction professional or craftsmen background, also did failure analyses of the constructions to identify in a first approximation the lack of skills and knowledge (Mahrin and Meyser 2013). In addition, structured

expert-interviews have been conducted with construction engineers from German companies, who possess knowledge of the Egyptian construction sector. This helped to get a better understanding of the working processes on Egyptian construction sites, as well as to get external verification of the interpretations that had been made thus far.

In a next step, talks have taken place with local engineers and managers about technical tasks that are to be taught within the project. One shortcoming of the decision-making phase regarding the technical tasks to be trained within each of the professional fields was that it was not possible to conduct a proper work-process analysis on exemplary construction sites. But with the help of a comparative analysis of German training regulations for the in-company training of the dual apprenticeship system with the Egyptian Qualification Framework, it was possible to allocate the hitherto identified working activities on the Egyptian construction sites to the German in-company training curricula. This comparative approach helps at the same time to offer the strengths of the German inter-company training centres that specialise in the craft – namely their huge experience in the training of these skills and abilities – to international clients. However, further steps are necessary for adaptation to the needs of the company, as well as the conditions of the qualification activities. The process of adapting the programme to the needs of the company happens through dialogical coordination with the leading engineers and managers of the company. This coordination is flanked by an activity-analytical evaluation of materials, e.g. drawings, material lists, specifications, photos of construction activities and other technical documents that the contractor makes available. The adaptation to the requirements of qualification measures in Egypt is gained by a theory-based mix of methods from interviews and data analysis, in which the latter raises the context of the qualification measures. On the one hand, “context” refers to the work culture background of vocational training in Egypt (Wolf 2011), while on the other hand, it also means the complex systemic-institutional requirements that directly influence the qualification measures and the requirements of the goods and job market, which have an influence over the training measures (Wolf 2010a, p. 2640).

3.3 The Didactic-Methodical Concept of ‘Training Measures’

In contrast to the very common CBET-concept or other skill training ‘drills’, it is the learning process and not the certified learning results (no matter how they came to be) that is the focus of German vocational training. Therefore, the WEB-TT consortium has decided, following evaluation of the hitherto existing data, to support the training measures with adapted medial clusters, in situ as well as locally and on the internet. Through this measurement, it can be ensured that the construction workers, who in Egypt have often only had a rudimentary school education and can barely read and write, can profit from qualification measures through the use of images and explanatory audio-material. The specific training-measures are laid out in the first

step for individual tasks of different craft groups, such as plumbers, tilers, plasterers, bricklayers, drywall builders and roofers. Because a completely different organisational structure exists on the Egyptian construction sites, in comparison to the German ones, and at the same time the qualification requirements and the conceptions of the necessary qualifications are so different, it is self-evident that it is not possible to become qualified in a ‘vocation’ (Beruf) according to German vocational categories. The Egyptian concept of qualification is strongly oriented towards on-the-job-qualifications with narrowly defined activities and tasks according more to the logic of the CBET. The participating German inter-company training centres, however, are easily able – based on their daily operations which consist in the realisation of training regulations for in-company training – to deliver training activities that meet the skills, knowledge and competencies that construction work qualification in Egypt requires. The detailed selection of these would be defined through a dialogue process with the partner companies.

With our understanding of the work regime and also of the social actors on the construction site, the above described foremen and their capabilities and their needs, too to solve problems, we decided to shape the arrangement with a didactic approach based on problem solving. The didactic-methodical arrangements are based on specific work tasks that are designed to be problem-containing learning and work assignments (Howe and Berben 2006, p. 387 f.). The learning structure of the task is based on the didactic construct of ‘complete action’, consisting of six learning steps: information gathering, planning, decision-making, implementation, monitoring and evaluation. Thus, on the one hand it is ensured that the training programmes meet the high problem-solving skills of Egyptian construction workers, and on the other hand, it also allows the transfer of new knowledge and skills to complement the established patterns of activity of the professionals with practical experience.

We did two pilot trainings in different trades of the company. First we did the training with plumbers and with plasterers. All of them were foremen with specific professional responsibility towards their trade and practical experiences. The groups during the second pilot were supervisors without specific professional trade responsibilities with only less practical experiences. Differences occurred between the two groups’ performances and an adjustment of our training activities towards the different target groups from the workforce is needed.

Our concept takes reference on the German legal regulation of training activities. We pay attention to the German regulation of in-company trainer certification, the so called AEVO (‘Ausbildereignungsverordnung’). Our training follow the regulation in activity field three of the AEVO, “Deliver a proper training” and we train the foremen in a two week course to understand to organise training and teaching activities acting intentional and with conceptual thoughts. The basis of our training was training material in written form combined with multi-media, including digital media. The training of the new didactic-methodological approach was done in the professional field of the foremen, but with the precondition that they must have a large practical knowledge to act properly and to understand the approach of complete action method. Without these preconditions it would have been complicated for them to get a deep understanding of the training methods we taught them. During

the training of the second groups – the participants were supervisors with only small practical experiences in the specific profession – it showed that to achieve a better performance in understanding the training methods we should improve their capacities to become more familiar with the practical professional skills and knowledge. For this personnel it would be better deliver in advance a short time professional training course in the specific trade, two or at maximum three days long. After the successful completion of a final exam of our course of an in-company trainer we were confident that the foremen supported with only short courses in specific technical or professional topics of its trades they will deliver proper training to the workforce they monitor. This training carries with it the idea of improving the quality and an increase of the work rate. However due to the turbulences of the Egyptian economy, the consortium WEB-TT was not able to monitor and supervise the follow up activities of the WEB-TT trained foremen on-site to improve the work quality of their subordinates to show the nexus between proper training and the increase of quality and work rate. At the end of the project in summer 2014 the huge company OCI was not willing to invest own money in the continuation of the workforce improvement by international cooperation but as already hereinabove noted the company continue the improvement of the workers quality by their own means but based on the common experiences with foremen training to become an experienced in-company trainer. With additional money from international donor agencies we are hopeful that the WEB-TT consortium will come back into the game.

4 Conclusion and Outlook

As demonstrated above, the concept of work culture is a useful toolkit to understand better a foreign system of TVET. Also the concept of stages in policy borrowing in education of Phillips and Ochs is a suitable theoretical approach to work properly a policy transfer project. In the R&D project WEB-TT the different approaches are successfully use to entangled culture and vocational training. They operate as a theoretical-practical guideline to orient and to shape properly adapted training activities. On a more general level, in the cycles of policy transfer of education the concept of work culture, give us a method to enlighten the more diffuse expressed cultural context in which TVET transfer activities are embedded and clarify what is meant by context of TVET. The six dimension of work culture can be used like an orientation frame to look more deeply but in faster track into the structures and mechanism of a given foreign TVET system. The cycle of education transfer with its four steps become a little bit clearer and more suitable by integrating the work culture in the steps using as a heuristic to reduce and clarify the forces of context affecting the process of policy borrowing. In the hereinabove described experiences of WEB-TT in the main we focused of the understanding of the Egyptian context and regulation by our work culture approach. Unfortunately we considered less into the process of transfer the German elements of TVET to our Egyptian partners, but as mentioned above in the chapter of the stages of policy borrowing in education the

insight we might have had in proper reflecting of the stages and the influences of context in each it opens only in a retrospective view. The core lack of our whole design and one key reason for the economic failure at the end of the project's funding the missing of a strong in company consultancy and advisory work package would have been more clearly during the project process as it was in reality. More attempt to deeper understand and to clarify on the steps of the policy transfer cycle after starting the process – the stages of decision – implementation – internalisation is needed. The cross disciplinary attempts and approaches similar to the prior done clarification with the work culture seem a promising way. Some approaches exist and are in different settings already tested (Rappleye 2006). Others have to be developed. We need more theoretical-practical TVET transfer activities to analyse and reflect ex-post to strengthen specifically the knowledge concerned to transfer activities towards developing countries. The stages of policy borrowing in education is a good tool but need more effort to sharpen and confect the tool to this concerned countries. However, the starting point is reached.

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Chapter 25

From Craftsmanship and Novices to 3D Printing and an Ageing Workforce – Is Vocational Education and Training (VET) Research Keeping Pace with Change as Well as Continuity in Work?

Lorna Unwin

Abstract Changes in work technologies, the way work is organized, and the nature, distribution and utilization of occupational skills and knowledge have always had an impact on VET practice and policy. VET research is concerned with exploring continuity as well as change. This chapter offers a reflection on how the interplay of change and continuity might require a more substantive and relational approach across the VET landscape. It questions whether VET researchers are sufficiently concerned with the life and practices of contemporary workplaces. The chapter tentatively suggests that it is time for some recalibration of the way VET research is conceived and organized in order to have a broader influence on policy and practice at both a national and international level. A focus on work might also offer a way to overcome some of the difficulties involved in comparative VET research.

1 Introduction

One of the attractions of being a researcher in the field of VET is its interconnectedness with the dynamic, diverse and contested contexts in which people work and in which goods and services are produced. The use of the term ‘work’ is, of course, highly problematic – are we referring only to paid work or do we, for example, include that which occurs in the home or through volunteering? Do we include in our scope the expanding world of self-employment and so-called portfolio workers? The formation, practice and sharing of expertise are themes that fascinate many VET researchers and they cut across the work contexts of everyday life, from paid

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work through to domestic routines and on into the myriad of leisure pursuits that nurture people's physical and mental well-being.

By foregrounding the study of work in this chapter, my aim is to ask to what extent VET policy and research have become overly concerned with analysing the institutional components within and across national systems. Such questions are problematic, of course, because there is a great deal of research in individual countries that lies below the international VET research community's radar. This is partly due to language barriers, but also because substantial amounts of detailed research gets reported within doctoral theses and other forms of unpublished literature. A further question for this chapter, therefore, is to ask to what extent it might be possible to bring more in-country research onto the international stage. Pilz (2012, p. 582) reminds us that, "(...) unlike other elements in the education system, vocational training is difficult to account for and analyse in an international context," but he continues "Yet if this disadvantage is used positively, we can derive perspectives that point to fruitful comparative research in the future" (Pilz 2012, p. 582).

A focus on work might offer a way to overcome some of the difficulties that Pilz identifies that can be problems for cross-country comparative VET research (Billett 2011).

As a researcher from the United Kingdom (UK), I have to acknowledge the potential irony in questioning whether VET research is overly concerned with continuities and has neglected to sufficiently consider the implications of workplace change. The UK's VET system is well known internationally and certainly in European education research circles for being in a permanent state of revolution. The very use of the term 'system' may cause some UK scholars, teachers, trainers and employers to smile, for the key characteristics of the UK's approach to VET since the state began to take an interest at the turn of the twentieth century have been that of voluntarism and of "letting a thousand flowers bloom". We are in the curious position of having a notably complex and chaotic "system", which lacks the stable social partnership structures and dedicated institutions found in many other European countries, yet, paradoxically, since the late 1970s, VET has been subject to a highly centralised and frenetic policy regime (Keep 2006). As a consequence, a great deal of VET research in the UK has focused and continues to focus on policy critique, with far less space given to investigating the curriculum and pedagogical challenges facing teachers and trainers.

VET policies and practices have, by necessity, adapted and changed over time in relation to both changes in work technologies, to the way work is organized and the nature, distribution and utilisation of skills and knowledge. Yet some VET practices would look remarkably familiar if viewed by apprentices and VET students from many years ago. This is partly to do with the resilience and continued relevance of some pedagogical approaches and disciplinary-based curricula. Likewise and relatedly, there are resilient threads in VET research. These include investigations into the relationship between theory and practice, the continued intransigence of gender segregation, the role and evolving nature of apprenticeship, the relationship between VET and general education, including higher education, and the status of VET. Since

the late 1970s, notable continuities have been a concern to research the impact of labour market change on young people, the meaning and assessment of competence, and the professional identity of VET teachers and trainers.

It is surprising, however, how relatively little VET research is concerned with the life and practices of contemporary workplaces. In seeking to stimulate a debate about the scope of VET research, this chapter tentatively suggests that it is time for some recalibration of the way VET research is conceived and organized. The use of the term ‘recalibration’ might seem strangely mechanistic as its English dictionary meaning relates to the way measuring instruments are adjusted to bring them back into line with a specific standard when irregularities have been identified. The term seems to suit my purpose, however, in suggesting that it might be useful to review the relationship between VET research and work so that we can debate how close, how loose, how flexible we want that relationship to be.

2 Craft as an Evolving Work Process

In seeking to raise questions about the extent to which VET research sufficiently engages with work, I want to begin by acknowledging the wider educative and cultural purposes of VET (Gonon 2012; Unwin 2004; Winch 2000). This is necessary not just because VET can and should unlock the door into a broader, yet associated world of learning, but also because many forms of work can be educative and provide significant contexts for self-fulfilment (Hyland 2011; Unwin 2009; Livingstone and Sawchuk 2003). Dewey’s (1938) argument should still be uppermost in the minds of policymakers and teachers and trainers: that vocational education provides a means through which people can consider what kind of lives they want to lead and, hence, identify the type of skills and knowledge they will need to acquire to achieve their goals. For Dewey, vocational education was more than the means to develop the skills and knowledge required to enter an occupation. It was the means to develop an understanding of the historical and social meanings of that occupation, paid or unpaid.

There are connections here to the decision that some people make to work in traditional crafts (e.g. jewellery, hand-made furniture, bakery, shoemaking etc.) and age-old industries such as fishing and forestry. The fashioning of beautiful bespoke objects is, of course, also big business (as the demand for expensive handbags and watches testifies), whilst in a different but related way, the enduring appeal of craft markets and the rise of the ‘artisan’ food merchants, the ‘slow food’ movement, and specialist coffee baristas maintains the presence of craftsmanship in contemporary town centres round the world. In the period following the 2008 international financial crisis when many countries were introducing austerity measures, the global market for luxury goods was booming. In 2012, the 75 largest luxury goods companies enjoyed sales of 171.8 billion USD, a growth of 12.6 % (Deloitte 2014). These figures are a stark illustration of the increasing polarisation between the global super rich and the majority of people. Throughout history, an important way for the

rich to demonstrate their wealth was through their display of luxury items and today that can be achieved through the cache of the handcrafted artefact.

On the website of Mulberry, the UK's largest manufacturer of luxury leather goods, the company promotes the continuing attraction of the handcrafted handbag:

The sewing machines and cutting presses may be more modern, but there is no automated machinery, no computer controlled technology, no robot than can produce a handbag. At the heart of each production line is a Mulberry team, working together. (<http://www.mulberry.com/making-mulberry>)

Similarly, though with a stronger focus on the weaving together of heritage and contemporary technology, the website of the luxury Swiss watchmaker, Patek Philippe, declares:

Independence, tradition, innovation, quality and craftsmanship, rarity, value, aesthetics, service, emotion and legacy are the fundamental values of the Genevan watchmaker. Patek Philippe has always aimed for perfection by creating timepieces of unrivalled quality and reliability, the uniqueness and exclusiveness of which makes them rare and precious pieces, a unique legacy to be handed down from one generation to the next. To achieve this, the company invests in innovation with new materials and leading-edge technologies, while continuing to preserve the tradition of ancestral watchmaking know-how, and maintains the industry's strictest quality control standards. (<http://www.patek.com/en/company/the-manufacture>)

In a very different sector, the same sentiments can be found on the website of the UK aerospace manufacturer, Rolls-Royce:

At Rolls-Royce, our people craft amazing technology, every day. They deliver vast projects, make exquisitely crafted components, perform astute accounting analysis and oversee complex supply chains. And they never stop looking for ways to do all of it better, smarter and faster. It's challenging work for passionate people, and our trainee programmes are a great way to get started. (<http://www.rolls-royce.com/careers/students-and-graduates/apprenticeships.aspx>)

Apprentices joining these companies will be inducted into communities of practice where their VET will look to the past as well as the future. It would be reasonable to assume that they will also develop the satisfaction that comes from producing goods and services they can take pride in. As Sennett (2008, p. 9) has argued:

Craftsmanship may suggest a way of life that waned with the advent of industrial society – but this is misleading. Craftsmanship names an enduring, basic human impulse, the desire to do a job well for its own sake.

In addition, he has written:

The slowness of craft time also enables the work of reflection and imagination – which the push for quick results cannot. Mature means long; one takes lasting ownership of the skill. (Sennett 2008, p. 295)

Sennett's evocation of craftsmanship¹, which forms part of his critique of the impact of capitalism, has been criticised for being overly romantic and nostalgic about how

¹ There is no easy way to overcome the sexist terminology within the scope of this chapter.

far a return to work based on what he claims to be the values and ethics of craftsmanship (Lorenz 2010), and, relatedly for misinterpreting Hannah Arendt's distinction between *animal laborens* (the worker as drudge) and *homo faber* (the person who oversees and judges the worker's output). Yet his book, *The Craftsman*, was successful in reaching out beyond the academy to a wider readership interested in reclaiming the sense of work satisfaction that seemed to be part and parcel of being a craftsman. In addition, it connects to the related concept of 'job crafting', which is being used to capture the ways in which some workers in low-grade and low-paid jobs reject the prescribed limitations of their job descriptions and find ways to demonstrate and utilise their skills (Wrzesniewski and Dutton 2001). Similarly, in his discussion of Sennett's thesis, Schwalbe (2010, p. 109) conceives the meaning of "craft" as spanning a continuum from what he calls "artisan craft" ("craftwork in its fullest sense") to what he calls "niche craft" at the other. He explains the term "niche craft" as follows:

Despite the formal limits of jobs, people may carve out microspheres of craft – areas of activity in which they can invent, solve problems, and learn new things, even if no-one notices. This kind of activity, call it niche craft, needs to be studied if we want to understand how jobs shape people. (Schwalbe 2010, p. 109)

VET research and practice will continue to have strong connections to the role and meaning of craft, whether in relation to the production of watches and handbags or aerospace engines. As we saw from the Rolls-Royce quotation above, the concept of craft transcends time, being equally suited to the precision required for technologically advanced manufacturing as for a bespoke piece of clothing or furniture.

3 Changes and Continuities in Work

Yet VET also has to contend with the continuities of the labour process. These include the negative aspects of what Brown and Scase (1991) have called "poor work", the relationship between the evolving and contested concept of "skill" and social class, race and gender (Seddon et al. 2010; Clarke and Winch 2007; Bensman and Lilienfeld 1991), and the deep-rooted inequalities in labour markets (Berg 2015; Lloyd et al. 2008).

As Green (2006) has shown, in advanced economies, whilst the skill requirements of many jobs have increased, so too has the intensification of work effort leading to falling levels of job satisfaction and the amount of discretion that employees are afforded to manage and influence their work tasks (Brown et al. 2011). He refers to this as the "paradox of job quality in the affluent economy" (Brown et al. 2011, p. 3). Standing (2011) has coined the term 'the precariat' to describe people who earn their living through a series of short-term jobs and without the safety net of employment and social welfare protection associated with occupational stability.

From the findings of a survey on the future of work involving 10,000 people in China, India, Germany, the UK and the US, and of 500 Human Resource profes-

sionals, the global accountancy firm, PWC predicts a shift to three “worlds of work”: the orange world where “small is beautiful” and companies break down into a “collaboration of networks of smaller organisations” and “specialization dominates the world economy”; the blue world where “corporate is king” and “big company capitalism rules as organisations continue to grow bigger and individual preferences trump beliefs about social responsibility”; and the green world where “companies care” and “social responsibility dominates the corporate agenda with concerns about demographic changes” with “climate and sustainability becoming the key drivers of business” (PWC 2014).

Gazing into crystal balls about the future of work has a long history, partly concerned with a desire to achieve a utopian state in which people would not have to work, and partly concerned with the destruction of jobs through mechanisation. In England, a group of textile workers known as the ‘Luddites’ came to fame in 1811 when they began attacking new machinery entering the hosiery and woollen mills in Nottinghamshire, Yorkshire and Lancashire. In 1817, the political economist, David Ricardo, who had initially regarded the growth of machines as a positive economic development, struck a more pessimistic note, arguing in his book, *On the Principles of Political Economy and Taxation*, that “the substitution of machines for human labour is often very injurious to the class of labourers” and that the “same cause which may increase the net revenue of the country, may at the same time render the population redundant”. The current levels of youth unemployment (estimated at 73.4 million in 2013) across the globe are a stark reminder of the continued impact of economic change. The ILO (2013, p. 2) has commented that “In advanced economies long-term unemployment has arrived as an unexpected tax on the current generation of youth”.

Thirty years ago, Piore and Sabel (1984, p. 17) argued that the developed world had entered the “second industrial divide” in which both white-collar and blue-collar workers were at risk. They called for governments to take the decisions necessary to generate a radical shift away from standardised mass production to what they termed “flexible specialisation”, which they argued “...is a strategy of permanent innovation: accommodation to ceaseless change, rather than an effort to control it”. They continued:

This strategy is based on flexible – multi-use – equipment; skilled workers; and the creation, through politics, of an industrial community that restricts forms of competition to those favouring innovation. For these reasons, the spread of flexible specialization amounts to a revival of craft forms of production that were emarginated at the first industrial divide. (Piore and Sabel 1984, p. 17)

This evocation of the concept of “craft” returns us to the earlier discussion about how people find meaning in work. Similarly, in their critique of the breakdown of the human capital promise that higher levels of education would enable individuals to secure high level jobs, Brown et al. (2011, p. 160) argued that governments have economic and political choices to challenge the “winner-takes-all society”.

Today, it is the rapid spread of digitization including the increasing use of robots that is causing concern (Ford 2015). In their assessment, Brynjolfsson and McAfee

(2015) argue that this will have a profound impact on the nature of a great deal of work and that: "...there's never been a worse time to be a worker with only 'ordinary skills and abilities to offer', because computers, robots and other digital technologies are acquiring these skills and abilities at an extraordinary rate". Similarly, Frey and Osborne (2013, p. 45) that:

As technology races ahead, low-skill workers will reallocate to tasks that are non-susceptible to computerisation – i.e., tasks requiring creative and social intelligence. For workers to win the race, however, they will have to acquire creative and social skills.

Rather than the radical economic and political change advocated by Piore and Sabel (1984) and by Brown et al. (2011), we see here the mantra that continues to be popular with policymakers that it is individuals who will need to change rather than the quality of jobs and the quality of workplaces. Thus the concept of "transferable skills" (also known as "soft skills", "generic skills", "interpersonal skills" and "life skills") continues to be promoted (for critiques see Guile 2010; Hodkinson and Hager 2009; Canning 2007).

For VET research, as well as for VET practice and policy, workplace change troubles our understanding of the concepts of skill and knowledge more generally. The shift into a post-industrial era in which service sector employment has come to dominate national economies, gives new momentum to the notion of 'soft skills'. The seeming clarity of skills and knowledge associated with occupational fields such as accountancy, engineering or hairdressing is disturbed by the rise of the knowledgeable consumer or client armed with information from the internet. New processes such as 3-D printing (also known as additive manufacturing) offer consumers the chance to create products at home as well as in the advanced manufacturing workplace, including the medical laboratory. For the VET researcher, gaining access to the workplace has become ever more important, both in order to maintain an understanding of the implications for VET of technological and other changes to the work process, and also to develop and refine the conceptual analytical frameworks required to critique those changes and to expose the underlying continuities.

4 Research in the Workplace

Alison Fuller and I have argued that vocational learning environments can be analysed through the use of the 'expansive-restrictive framework' (Fuller and Unwin 2004a). The framework originated in our qualitative research on why apprentices, even within the same sectors and on seemingly equivalent apprenticeship programmes, were having markedly different experiences. We extended our research to include early career and trainee professionals (Fuller and Unwin 2014). We argued that the standard front-loaded model of professional education, which presumes that the core knowledge and skills are attained in an educational setting before entering the workplace or, at best, in the classroom in breaks from the workplace, erroneously assumed that all "professional" workplaces would offer the same affordances

for learning. We then built on those ideas using the concept from economics of the “productive system” to show how all workplaces are affected by the position they occupy within a specific productive system (Felstead et al. 2009).

The concept of a productive system is based on the interrelationship between the social networks (internal and external to the workplace) through which the production and consumption of goods and services (in both the public and private sectors) is organized. This identifies the patterns of power and control that flow through the productive system. The key purpose of the ‘expansive-restrictive’ framework is to enable those involved with workplace learning and VET to analyse a workplace’s characteristics as a means for evaluating the potential for offering a conducive environment for learning (both for individuals and teams). Furthermore, the analysis points the way to the types of action that might be taken to shift the workplace towards becoming a more ‘expansive’ learning environment. A notable characteristic of an ‘expansive’ environment is the amount of discretion that individuals have to conceive, execute and reflect on their work and to be trusted to make judgements as part of their everyday work activity.

The vocational educator often has to work within and across different productive systems, those of their home institution and of the workplaces they visit to monitor, support and assess learners. Hence, their pedagogical and curriculum design expertise has to adapt to and mediate between:

- Classrooms,
- Workshops,
- Simulated environments,
- Workplaces.

This mediation also involves recontextualising the way skills and knowledge are defined in the workplace so that they can be further developed in classroom or workshop settings (Evans et al. 2011).

Whilst gaining access to workplaces can be very time-consuming and can involve sensitive negotiations in terms of the level of freedom that a researcher will have, the benefits can be considerable. There is much that the funders of research need to do to acknowledge the costs involved and it may be that there is untapped potential for developing more collaborative research and development (R&D) strategies involving both VET researchers and practitioners. If more of this could be done on an international comparative basis then this would help to transcend the difficulties of cultural and institutional translation alluded to by Pilz (2012).

5 Questions of Age and Stage

In many countries, VET is still positioned within the state education system and regarded as primarily for the skill formation of young people. Yet vocational education can enter people’s lives at different points and have different purposes, from an

introduction to work through to advanced practice. Another way in which VET is having to adapt to changes in work is in response to the fracturing of the modern era's linear life course trajectory of education-work-retirement (Unwin et al. 2015; Evans and Helve 2013; Field et al. 2013). There is now an expectancy that more people will have to engage in paid work (and hence further training) beyond standard retirement age, a concept which itself has been abandoned in some countries. The UK and Australian governments both fund so-called adult apprenticeships, which include people from age 16 through to 60 and beyond (Fuller et al. 2015; Karmel 2006).

In the research literature as well as in policy documents from national governments and supra-national agencies such as the European Union and the OECD, VET is still often divided between the concept of initial VET (IVET) and continuing VET (CVET). This division is also reflected in national structures where IVET tends to be dominant (Cedefop 2015). Whilst there is a justifiable basis for differentiating between the needs of young people in transition from education to work and adults who are in need of updating their skills or retraining to switch to a new or move within a new occupational field, the long-standing age and stage distinctions should be subject to some reappraisal.

The age and stage distinction is also reflected in the theories of learning that inform VET research and practice, perhaps most notably in Lave and Wenger's conceptualisation of the apprenticeship journey within a community of practice as being a trajectory from novice to expert ('old timer'). We know, however, that although Lave and Wenger's conceptualisation was necessary in order to identify and describe the ways in which "novices" moved from the status of being "legitimate peripheral participants" to becoming full members of their occupational community, it presents an ideal type. In reality, the pace and nature of an apprentice's trajectory, as would be the case with any other learner, is unique (Fuller and Unwin 2013). This is partly due to the individual's disposition and partly due to the nature of the workplace and the occupational field. In addition, some young people bring skills and knowledge (notably in relation to digital technology) into the workplace which may put them in a position where they can actually teach an 'old timer' something new (Fuller and Unwin 2004b). The generational dimension of contemporary workplaces in which young people and increasingly older workers experience work and learning together poses pedagogical questions for VET as well as for the way VET programmes are designed.

6 Conclusion

In this chapter, I have argued that it is perhaps time for some recalibration of the way VET research is conceived and organized in order to have a broader influence on policy and practice at both a national and international level. My main proposal is for a stronger focus on work. Apart from the relevance of this for enabling VET

research to have a greater influence or even to gain greater recognition, I have also suggested that a shared interest in work offer a way to overcome some of the difficulties involved in conducting comparative VET research. In arguing for a stronger focus on work, I am not echoing the continued call from policymakers for VET to become 'more relevant' by moving closer to the requirements of the labour market. My purpose is somewhat different, though it would also facilitate a closer, though not necessarily an easier relationship. We need more detailed studies of work to inform our theories of the purpose and nature of VET so that VET can continue to support skill formation, but also so that VET can provide a critique of how skills and knowledge are being utilized.

In preparing this chapter and the keynote presentation from which it arises, I was stimulated by a parallel study I am doing with colleagues on the relationship between VET, knowledge and innovation in regional economic development (see Guile et al. [forthcoming](#)). We are drawing on insights from the literature on Territorial Innovation Models (TIM) in the field of Economic Geography and the shift that has taken place within that research community from systems to practices. Our argument is that in order to understand the processes that enable knowledge to play a dynamic role in regional economic development, we need to focus on the generative role of social practices.

One of the illustrations we are using is Crevoisier and Jeannerat's (2009) case study of the Swiss watch industry. This explains how in the early 1980s, the industry was threatened by the growth and success of the Japanese watch industry, which had taken advantage of the development of quartz technology in the 1970s. Employment in the Swiss industry fell between 1970 and 1984 from 90,000 to 30,000, and the number of enterprises dropped from 1600 to about 600. The Swiss watch manufacturers responded by re-imagining the purpose of a Swiss watch. They focused on the value (the authenticity and the aesthetic appeal) of their historic craft tradition, whilst also deploying new synthetic knowledge to institute cross-industry technological improvements and modularise production. At the same time, they collaborated with the fashion industry and other producers of luxury goods to broaden the types and levels of expertise required to shift into a new way of working. The combination of craft heritage and modern technology meant they drew on long-standing VET practices of skill formation as well as requiring the learning of new techniques required to meet new production standards.

The Swiss example contains the element of change and continuity that I have tried to weave through this chapter. Occupational expertise is a dynamic, mysterious and evolving phenomenon and it demands constant attention. Its development rests on sustained practice over time and relies on inputs and support from adaptable vocational teachers and trainers who themselves have the space, time and resources to sustain their own professional and pedagogical expertise. Just as in the Swiss example, VET can continue to evolve whilst still being anchored in shared traditions and values, but it needs to draw on and collaborate with people, places and ideas beyond its own national and research community comfort zones.

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Chapter 26

Policy Borrowing in Vocational Education and Training (VET) – VET System Typologies and the “6 P Strategy” for Transfer Analysis

Matthias Pilz

Abstract The issue of exporting VET systems is currently very topical in the international debate. It is, however, surprising that there is virtually no recent research into such areas as practicability, successes achieved, problems encountered, and long-term impact.

If a transfer approach should be successful, there must be at a first stage a comprehensive and detailed analysis of the diverse needs and perspectives of the local stakeholder groups. In line with this logic, the paper presents an analytical tool that can be used to categorise individual countries in terms of the way VET is perceived and designed within the specific socio-cultural context. This also enables initial indicators of potential needs to be identified.

The next stage in the paper is, to focus on the actual transfer of all or part of a VET system from one country to another. There has so far been no adequate explanation of how this might be done. The existing empirical findings show that transfer is a major challenge for all those involved. The approach is intended to provide a structure for such transfers and identify possible problems or obstacles before the process gets under way. This approach, labelled as the “6 P strategy”, is based on the findings documented in the literature and supplemented with the author’s experience of a range of transfer projects.

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1 The Starting Point

The issue of exporting VET systems is currently very topical in the international debate and, of course, in the German debate, too. In Germany, the initial euphoria, particularly during the 1970s (Schmidt and Benner 1989; Arnold 1985; Schaack 1997), very rapidly gave way to a more sober assessment of the long-term successes (Lauterbach 2003; Biermann 1994). Debate is now focusing again more closely on how, and to what extent, Germany's "dual" model of VET might be transferred to other countries (Clement 2012, p. 102 f.; Hummelsheim and Baur 2014). Of particular significance as part of the background to the debate have been the agreements Germany has concluded with a range of countries on intensive cooperation in the area of VET (Thomann and Wiechert 2013; Herbert-Lewin-Strasse 2014) and the setting-up of the German Office for International Cooperation in Vocational Education and Training (GOVET) (GOVET 2014), which is part of the German Federal Institute for Vocational Education and Training (BIBB) and has responsibility for policy in this area.

Given this renewed interest in the issue of VET transfer, it is, however, surprising that there is virtually no recent research into such areas as practicability, successes achieved, problems encountered, and long-term impact. In the German-speaking world, for example, some approaches have focused on the theoretical basis for training transfer (Barabasch and Wolf 2011) while others discuss options for transfer at a more intermediate level of abstraction (Euler 2013). However, there are virtually no empirical findings relating to the export of VET: The exceptions are research evaluating relevant projects implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH (Stockmann 2013; Schippers 2009), some other pilot projects supported by the German Government (Posselt et al. 2012) and current work by the International Labour Organization (ILO) on implementing the training programmes of three major German companies in the USA (Aring 2014).

Also of interest is a study of skills development activities in Chinese, Indian and US subsidiaries of German companies (Pilz and Li 2014). This study centred on the initial question of how German companies operating abroad design their skills training at the intermediate skills level by comparison with local companies. It found that outside Germany, the training patterns of German companies familiar with – and mostly appreciative of – the dual vocational training system may provide important indicators of where the system is potentially transferable and where not. The findings from this study, which involved 36 case studies, showed clearly that against the backdrop of country-specific systems, including the education system, the labour market and the social status of vocational training, it may be difficult or even impossible for German companies to carry out wider-ranging training activities and, hence, to transfer the dual system in whole or in part.

Verfürth and Diart (2013) report on an online survey of German companies in India carried out by the Central Agency for Continuing Vocational Education and Training in the Skilled Crafts (ZWH). 170 companies took part in the survey, which concluded that:

In the absence of an appropriate infrastructure, most of the companies surveyed are not yet basing their training on the kind of dual vocational training used by companies in Germany. (...) The main focus of the training is on company- or job-based induction, with very little by way of training in more general aspects. ('author's own translation')

A current survey of Swiss training activities in India also offers some useful insights, given that Switzerland's VET system is similar to the German system in terms of structure and organisational background undertook a study of ten companies (Haering et al. 2014). The questionnaire responses showed clearly that the conditions within Indian companies made it more difficult to export the dual training system. Problems encountered included, in particular, inadequate English language skills and a lack of diagnostic and pedagogical skills among the instructors and trainers (Haering et al. 2014, pp. 28–30). On the participant side, meanwhile, this study found that it companies had problems attracting applications from appropriately qualified young people: the reasons included the fact that vocational training enjoys low social status and the fact that the Indian labour market is unregulated, with easy access and high levels of labour turnover. In addition, Swiss qualifications are not officially recognised (Haering et al. 2014, p. 33). Despite a range of positive individual aspects in this project, those implementing it did not manage to persuade many Swiss companies operating in India to take part (Haering et al. 2014 p. II, 33).

2 Stages in Exporting VET

Since existing research covers only a small number of case studies, it cannot provide an adequate body of empirical data relating to the export of VET within a sub-sector. Moreover, country-specific findings cannot automatically be transferred to other countries.

Nonetheless, the overview shows a clear trend: if the transfer approach is to be successful, there must be a comprehensive and detailed analysis of the diverse needs and perspectives of the local stakeholder groups, such as employers, young people, elected representatives, representatives of training systems, and trade union representatives. Moreover, the needs of these groups vary in line with the respective regional framework, so the first stage is to focus not on an ethnocentric view (Pilz 2012, pp. 561–571), but, rather, on the framework prevailing in the importing country by means of a typology-based systematic country analysis (see Sect. 3.). Such a process often reveals what needs the country has and how they relate to and interact with its training and employment system and with other sectors of society (see Sect. 3.).

The second stage is to determine the specific needs within the individual context and stakeholder group, offering a systematic approach (see Sect. 4.).

The approach outlined here is compatible with a number of existing approaches, such as Wolf's (2011) working culture approach to VET and the key influence of the framework in the importing country (Barabasch and Wolf 2011). Stockmann and Silvestrini's (2013) findings also come to the same conclusion in evaluating a number

of projects implemented by the GIZ or its predecessor, the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ). They make a clear call for

(...) a systematic needs analysis to be carried out prior to, or at the start of, VET projects to ensure that the project delivers training in line with labour market needs. (Stockmann & Silvestrini 2013, p. 178)

and for

(...) projects with a claim to achieving systemic change to be based on comprehensive ex-ante evaluation, with a view to reaching an accurate assessment of the likelihood that the aims will be realised. (Stockmann & Silvestrini 2013, p. 184)

In line with this logic, the next section presents an analytical tool that can be used to categorise individual countries in terms of the way VET is perceived and designed within the specific socio-cultural context. This also enables initial indicators of potential needs to be identified.

3 An Instrument for Producing Country Typologies

Placing a VET system within a typology is the first stage towards identifying requirements for adaptation. For example, where a country's system is highly stratified, VET may have a lower status and a poorer reputation. If the intention is to remedy this from a training policy perspective, this approach offers potential for designing programmes. It is impossible for us here to discuss all possible examples of needs and requirements. However, it is quite clear that the identifiable needs must be discussed explicitly with the decision-makers and with those involved and that it is appropriate also to reflect previously unidentified needs (see above). This can be achieved using the transfer analysis instrument described below.

3.1 Elements of the Typology

Existing typologies of VET systems (Steedman 2012; Rauner and Wittig 2009; Crouch et al. 1999) are very often facing some problems. For example Frommberger and Reinisch (1999, pp. 340–343) have noted that typologies 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 1995, p. 372). To avoid a too narrow approach our new typology combines different perspectives from sociology, political science and also VET pedagogy.

Furthermore, existing comparative research into VET has focused particularly on the macro-level of training systems (Grollmann 2009, p. 255). Consequently, the approach described below is innovative because it integrates all three relevant levels of VET. In other words, elements of the typology are generated not only at the

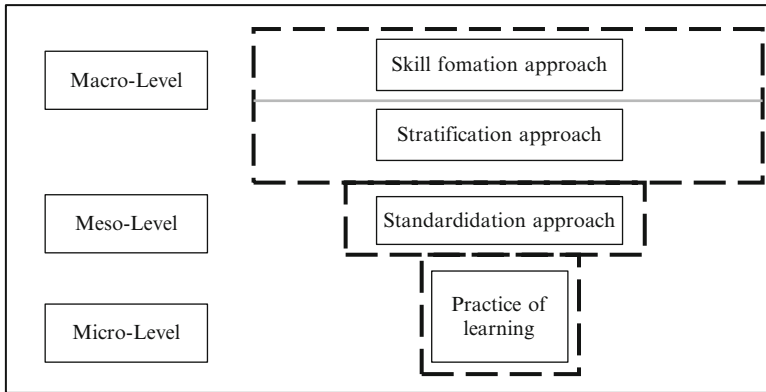


Fig. 26.1 The four elements of the typology (Source: author's own compilation)

macro-level of a VET system – at the level of stakeholders and funding – but also at the meso-level, including elements such as the curriculum, the nature of the institutions involved, certification, and the teaching staff. Moreover – and this is something that is almost entirely absent in existing typologies (Grollmann 2009, p. 255) – our approach aims specifically to analyse the micro-level, the level of concrete teaching and learning. This is important because it is ultimately at this level that the product of any educational process is developed.

The different elements of the new typology can be described as following (Fig. 26.1):

Firstly a model from the field of comparative political economy is considered and used as “collective skill formation” (Busemeyer and Trampusch 2012) is relevant. This approach fits within the tradition of an institutional political economy (Culpepper and Thelen 2008) and focusses on the interaction between political and socio-economic institutions and other stakeholders in the VET context. This model has in the past frequently been used in the international context in a cross-disciplinary way. The model operates primarily at the macro-level. In addition to the influence of stakeholders on VET policy, the issue of direct funding and financial involvement is also of crucial importance (Busemeyer and Trampusch 2012, p. 21). The skill formation model will be taken as the starting point for developing a typology and covers four characteristics. It reveals the influence of the state on VET and the potential for activity by and influence from companies. Where both influences are limited, individual influence may be prioritised as the third value (for example, participation in individually funded training provision organised by the private sector). Where, however, state and companies have a high level of influence, this may be characterised as a mixed system. As a result, differing levels of activity produce a total of four different constellations of stakeholders that can then be illustrated in the form of a matrix. This model is not only the starting point for the entire typologisation process but also links to the stakeholder model, which is important in VET, and issues of educational governance (Berger and Pilz 2009).

Secondly, we have included elements of an approach from the field of sociology, which focuses on the constructs of “stratification” and “standardisation”. This approach was developed by Allmendinger (1989). In particular, it has proved very productive and informative in international comparative research (Shavit and Müller 2000; Pilz and Alexander 2011). In this approach, stratification forms part of the macro-level and relates to issues of “tracking” and of the marked differentiation of and separation between general training courses from vocational ones. Shavit and Müller (2000, p. 443) have related this approach explicitly to the education system and argue that “(t)he term ‘stratification’ refers to the extent and form of tracking that is pervasive in the educational system.” In their research, they then use the term “tracking” to refer to pupils’ different trajectories through the school system, a view that takes in both the distinction between general and vocational education (and the different routes taken into them) and the differentiation of hierarchical levels by access, selection and transition mechanisms (Allmendinger 1989, p. 233). Another relevant issue is the importance of rankings and league tables for education and training institutions, since such ranking systems not infrequently produce a form of “indirect stratification” (Pilz and Alexander 2011). Stratification should also portray the status and image of vocational training courses within individual societies. To simplify, “stratification” needs to be expressed in a duopolistic sense – as either “high” or “low”. It is important to bear in mind that such characteristics are relative values. The same applies to the following assessments.

Standardisation, by contrast, forms part of the meso-level. The key question here is how the structures and processes underpinning any VET system are standardised and made subject to binding regulation (Müller and Shavit 1998). Shavit and Müller (2000, p. 443) define standardisation as follows:

(...) the degree to which the quality of education meets the same standards nationwide. Variables such as teacher training, school budgets, curricula, and the uniformity of school-leaving examinations are relevant in measuring standardisation.

Standardisation can be given concrete expression and structured by means of differentiating between standardisation activities on the input side, on the process side and on the output side within the VET system. Thus, certification and the accompanying rights and entitlements relate to the output side and are of particular relevance. For example, they may explain whether vocational training courses form part of an exit-based or entry-based system: where follow-on training institutions devalue certificates, this is an entry-based system. Specifically, this element focuses not only on certification but also, and in particular, on curriculum, institutions and teaching staff. Here, too, standardisation is a duopolistic construct.

Thirdly, the explicitly vocational-pedagogical perspective now enters the equation. We cannot directly use existing wide-ranging approaches to typology development but need to adapt approaches from diverse areas of vocational pedagogy and teaching design. Here, the focus is specifically on the concrete relevance to vocational practice or to later roles within the employment system of the teaching and learning processes. To achieve this, we shall fruitfully make use of two established approaches from the pedagogy of VET.

On the one hand, the learning content delivered may be analysed in relation to both its theoretical and its practical content. At operational level, this would, therefore, include aspects such as the skill acquisition expected as a result of a particular learning process or the selection and structuring of the topics covered and the balance between a technical skills orientation and a situational orientation. Of particular significance here is also the question of whether, as part of vocational learning processes, curricula produce a fragmentary and poorly integrated acquisition of skills or whether a system focuses instead on the acquisition of complete and complex performed actions in the context of situated learning (i.e. planning, implementation and review) (Billett 2001).

On the other hand, this last point illustrates the crossover with a further approach, this time related to the kinds of teaching and learning involved and, hence, the teaching process. Heavily teacher-centred learning activities can be interpreted as substantially influenced by theory. Here, the interaction and social relationships between teachers and learners (such as teacher-centred work versus group work or receptive learning versus discovery learning), the level of freedom learners have within the learning process (self-directed learning), and the individualisation of learning processes all play a part. Furthermore, the practical relevance of the media and methods used, including such teaching and learning arrangements as case studies, is also important (Grossman et al. 1989).

In short, a duopolistic scale – “high” or “low” – is needed to assess the practical relevance of teaching and learning processes.

3.2 Typologisation of Different National VET Systems

Below, we allocate individual countries to the typology for illustrative purposes. The main aim here is to demonstrate how the typologisation works. Consequently, we shall not present each country in detail and will only outline the consequences of each assessment in the context of the dimensions used.

Within the skill formation approach, the USA is seen as having a liberal approach with a low level of state and company influence and a high level of individual influence (Busemeyer and Trampusch 2012, pp. 12–14). Both stratification and standardisation are characterised as “low” (Müller and Shavit 1998, p. 14). At micro-level, there is a strong practical orientation to “learning by doing” at the workplace if college courses, which tend to focus more on general training, are excluded (Zirkle and Martin 2012) and the widespread model of skill development at the workplace is given priority (Barabasch and Rauner 2012).

Even if in Canada the impact of the college programs in VET are more important than in the USA, the overall situation in Canada is more or less similar to the one in the USA (Lehmann 2012; Taylor 2006; Kopatz and Pilz 2015).

France, by contrast, is deemed to have a VET system that is primarily state-oriented (Busemeyer and Trampusch 2012, p. 12). Against a backdrop of strongly segmented practice between general and vocational education and training,

stratification can be classified as “high” (Géhin 2007).¹ Standardisation is also classified as “high” (Müller and Shavit 1998, p. 14), and teaching and learning processes are strongly theoretically-oriented with a low level of relevance to practice (Brockmann et al. 2011).

Japan’s VET system is strongly dominated by companies (Thelen and Kume 1999). Stratification can be categorised as “high” if the informal elements of training, which are of importance in Japan, are given appropriate significance (Pilz and Alexander 2011; Kariya 2011).² Standardisation is categorised by Müller and Shavit (1998, p. 14) as “high”, although only if the informal mechanisms are taken into account, while teaching and learning processes within companies are geared to practice (Pilz and Alexander 2011).

Many studies single out Germany for its ‘dual’ training system in which the state and companies share responsibility for vocational training (Busemeyer and Trampusch 2012, p. 12; Deißinger 1995). Both stratification and standardisation are categorised as “high” in Germany (Müller and Shavit 1998, p. 14; Blossfeld 1994), while learning processes are geared to practice or actually form part of practice (Deißinger 1995; Blossfeld 1994).

The dominant context in India is one of low levels of state and company influence, even if some Industrial Training Institutes existing (Mehrotra 2014; Pilz 2016). Stratification is considered “high”, in particular because of the strict separation between general and vocational training (Singh 2012; Pilz and Li 2014). By contrast, skill formation in the Indian system is dominated by informal structures and processes, with VET institutions, certificates and formal curricula playing only a minor part. As a result, standardisation is classified as “low”, and within this predominantly informal system, learning processes tend to be directly linked to practice (Singh 2012).³

In Mexico the situation is quite similar to the one in India. General and academic education is strictly separated from the vocational track. The VET system is very small by number of participants and partially shaped by the different provinces in Mexico to meet their own demands. The formal VET system is predominantly located in state regulated vocational institutions with low connection to the working life. But the major vocational training, which is of interest here, is unorganised and follows a “learning by doing” approach, mostly on the basis of private motivation (Kis et al. 2009).

China can be regarded as a country with a strong state influence on VET (Pilz and Li 2014). The clear separation of vocational training from general education and training, along with restricted scope for ‘progression’ within VET, suggest a

¹Müller and Shavit’s slightly different assessment (Müller and Shavit 1998, p. 14; medium stratification) is the result of their three-point scale; we are using a two-point scale here.

²These findings diverge from those of Müller and Shavit (1998, p. 14; low stratification), who argue primarily at the formal level.

³By contrast with informal skill formation, the formal VET system in India is less important in quantitative terms (Pilz et al. 2015).

Table 26.1 Typologisation of selected VET systems

	Skill formation	Stratification	Standardisation	Practice of learning
USA	Individualised (low state, low employer activity)	low	low	high
Canada	Individualised (low state, low employer activity)	low	low	high
France	State dominance	high	high	low
Japan	Company dominance	high	high	high
Germany	State and company dominance	high	high	high
India	Individualised (low state, low employer activity)	high	low	high
Mexico	Individualised (low state, low employer activity)	high	low	high
China	State dominance	high	high	low

Source: author's own compilation

high level of stratification (Shi 2012). Standardisation in VET is “high”, but training is not highly geared to practice (Shi 2012; Pilz and Li 2014) (Table 26.1).

The classification of real types to individual dimensions and the emergence of recurring patterns of ideal types may be achieved by forming and analysing clusters. Visually, this can be illustrated in a three-dimensional graphic illustration: Fig. 26.2 demonstrates this for the few examples discussed in the previous section.⁴ As already noted above, categorisation as “high” and “low” should be interpreted relatively. The various sub-criteria of each dimension may be weighted differently according to their country-specific importance. Moreover, we would again point out that categorisation does not constitute a cross-country measure and, therefore, says nothing about the relative value and quality of individual VET systems in the comparison (Fig. 26.2).

Even these few illustrative country categorisations throw up some interesting findings. For example, two countries with differing skill formation modes (Japan and Germany) correlate to a substantial extent on all three of the remaining dimensions and, thus, across all three levels. By contrast, countries with an identical skill formation mode (USA and India) diverge substantially on the stratification dimension. It is not possible here to enter into a more detailed discussion on the basis of the small number of country categorisations already carried out and the limited options for implementation: we are focussing here on illustrating how the model works rather than generating findings from the typology.

⁴To determine the scale and/or relevance of a particular aspect of the VET system as a whole (see discussion above), the relative number of participants in a programme can be quantified as a proportion of all participants in VET. This proportion can then be reflected in terms of the size of the relevant symbol. Thus, a large symbol may represent extensive uptake (for example, 80–100 % of an age cohort in VET complete the relevant part of the system), while a small symbol signifies a smaller importance (below 50 %, for example).

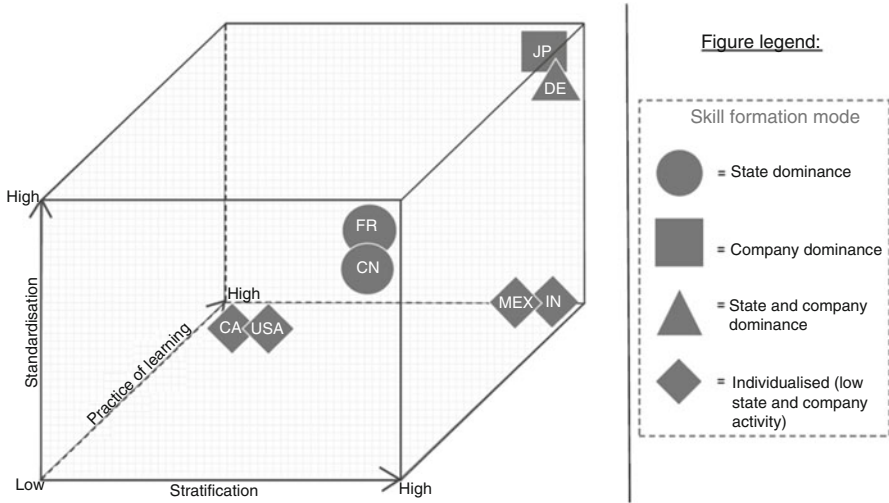


Fig. 26.2 Visualisation of the findings for individual countries (Source: author’s own compilation)
 CA Canada, USA USA, FR France, CN China, IN India, MEX Mexico, DE Germany, JP Japan

4 An Instrument for Analysing VET Transfer: The “6 P Strategy” for VET Export

The preceding section outlined the process of initial identification of key elements of the existing VET system in the importing country and, in broad outline, possible needs. The next stage is, therefore, to focus on the actual transfer of all or part of a VET system from one country to another. There has so far been no adequate explanation of how this might be done. The existing empirical findings show that transfer is a major challenge for all those involved. The approach described below is intended to provide a structure for such transfers and identify possible problems or obstacles before the process gets under way. This approach, labelled as the “6 P strategy”, is based on the findings documented in the literature (see above) and supplemented with the author’s experience of a range of transfer projects. The “6 P strategy for VET export” comprises six core factors to be taken into consideration in any transfer project. As a result, the strategy does not indicate specifically how any individual project should be implemented at operational level; rather, the “6 Ps” are anchor points for assessing the embedding framework.

The following three characteristics underpin understanding of the system. First, this is a holistic approach that reflects the full range of dimensions and processes involved in transfer: a process will reflect the maximum number of needs and effects only when all areas and levels of a VET system are given full consideration, and this is not the case with a partial analysis. Second, this is a wholly demand-driven approach: transfers will be successful in the long term only where an

approach prioritises the needs in the importing country (Krohwinkel-Karlsson and Sjögren 2008; Keating 2009). Third, it should be emphasised that the approach focuses on the central role played by teaching and learning in VET processes, since teaching and learning are the core VET products being exported. Aspects of training policy, organisational factors and other support elements form part of the design but are not central to the strategy.

The “6 Ps” in the “6 P strategy for VET export” are as follows:

1. Priorities

As set out above, the first stage is to set priorities so that the specific requirements of the importing country can be identified. This first point is, therefore, the bridge to establishing a typology (see above): is possible to identify in principle a number of needs at macro level, although this is not in any way a fundamental local needs analysis. Account should be taken not only of training needs from a training policy perspective but also, and in particular, of the perspectives of those involved – learners, instructors/trainers and employers. Setting their potentially differing needs situations against each other and comparing these with existing VET systems makes it possible to operationalise specific training needs.

Identifying these needs is, however, only the first stage. These needs are not then translated directly into transfer aims but form the basis for further critical reflection against the backdrop of the dimensions included in the typology, with a view to assessing how they interact with other parts of the system. The first step is not complete until this has been done.

This process not only enables priority needs to be identified but also aims at securing substantial acceptance and ownership through the participation of those involved. Such acceptance is particularly important where changes may potentially engender fear and anxiety among those affected, such as fear of loss of power (Hall and Hord 2001).

2. Power

Since teaching and learning form the focus of the approach represented here, the skills development needs identified must be underpinned with appropriate resources, as this is the only way in which both qualitative and quantitative training needs can be met satisfactorily. The necessary resources include appropriately equipped teaching and training rooms and modern, target group-specific curricula and teaching and learning materials. The adaptation of curricula and materials should be based on the skills development needs of the current and future regional and/or national labour market, prior learning (for instance, in literacy), and the capacity of the instructors/trainers. This means that it is not always appropriate to deploy the most up to date technology and that, fundamentally, the quality standards of highly developed industrialised countries cannot be transferred across without prior adaptation.

3. People

The role of training staff is underestimated in many cases, but they are the key to successful learning. Only well-trained instructors and trainers can manage meaningful

learning processes. Nor can such skilled staff be replaced by the use of learning materials, learning software or online learning packages: such materials and packages need to be produced by appropriately skilled staff, and learners need guidance from their instructors/trainers in using and reflecting on them.

It is, therefore, essential that an adequate number of appropriately skilled and motivated instructors/trainers is trained and then employed in training establishments.

To achieve this requires not only instructors/trainers with a high quality of training but also an attractive salary for this group as measured by average income in the relevant country. This strategy must also include potential earnings on the basis of which the individual can make long-term plans and that open up career options within the VET system: it is misguided to think that low rates of pay and restricted opportunities for development will attract talented new instructors/trainers with potential. It is not possible to say categorically whether instructor/trainer training should always be academic in nature; this is a decision that needs to be made on a case by case basis. What is clear, however, is that instructors/trainers cannot be recruited directly from the VET institution in which they work, since only a wide-ranging technical and pedagogical training can produce professionals with the right skills and authority.

4. Poaching-avoidance

We now shift the focus to employers – who, ultimately, are the users of skilled staff – to identify two key elements that require attention.

First, it is important consistently to encourage employers to become involved in the training process as a way of ensuring that skills development is based on actual practice and that the skills taught reflect the real world. Regardless of whether companies are directly involved in training, as they are within a dual training system, for example, whether their involvement is mediated through such representative bodies as Chambers of Industry and Commerce, or whether they intervene directly as individual companies in the design and shaping of courses of training, they must receive a return on their investment. The problem of poaching, which is rife in many countries, therefore needs attention to avoid the risk of a high turnover of skilled staff (Muehlemann and Wolter 2011). Nevertheless, the concerns and needs of the companies need to be taken into account (see above).

Second, in-company training and skills development initiatives should be designed in such a way that there is a clear advantage to companies in terms of their cost/benefit analysis of engaging in such activities (Acemoglu and Pischke 1998; Pilz 2009; Berger and Pilz 2009). Without such a clear advantage, long-term acceptance on the part of employers cannot be assumed. As a result, state targets and training regulations should be defined as clearly as possible, written in a comprehensible way, and not be too bureaucratic, so that it is possible to secure these advantages.

5. Progression

A further perspective is that of those taking part in training measures. As the individuals whose skills are being developed, they are, after all, the very focus of any training initiative, so it is crucial to make participation in training as attractive to them as possible. All activities should, therefore, be assessed in terms of the extent to which they motivate participation. When innovations are being put in place in VET systems, it is important that the state focuses particularly on progression (Young and Raffe 1998). State bodies should work towards ensuring that learning processes culminate in a test of skills development that is then recognised and certified according to an agreed procedure. This is the only way of ensuring transparency with respect to the standard achieved by individual participants. At the same time, certification ensures as smooth as possible a transition for the trainee into the employment system. It remains crucial that more substantial training courses are certified in a way that also ensures access to general education for the trainees concerned. Against the background of parity of esteem between general and vocational education and training (Young and Raffe 1998), this will boost the status and, thus, the attractiveness of VET (Lasonen and Gordon 2009).

6. Privileges

Those affected by the implementation of innovations in VET include not only the participants in training measures but also, in a longer view, skilled workers already in employment. Opportunities in the education and training system and options within the employment system are, therefore, equally important. Consideration needs to be given to how skilled workers can be appropriately deployed in employment so that the competencies they have can be used meaningfully and in a way that will motivate them. Factors playing a role here include not only demanding and challenging activities but also such aspects as health and safety at work, workload, etc. Even more important, however, is payment (Blöndal et al. 2002): demand for training, and the likelihood that training activities will bring success depends on there being a long-term monetary advantage to the individual employee in acquiring skills. State agencies should, therefore, work towards a regulatory framework that prevents discrimination and market distortions.

The six points presented here (Fig. 26.3) should be regarded not as a definitive and conclusive construct but, rather, as an initial structured process that will help design and safeguard the implementation of VET exports for the long term. Further

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|--|
| <ol style="list-style-type: none"> 1. Priorities > demand-driven approach, ownership 2. Power > modern rooms, equipment, curriculum and teaching materials 3. People > qualified instructors/trainers and organisers, adequate pay for instructors/trainers 4. Poaching avoidance > loyalty, reasonable costs 5. Progression > qualified testing, certification, progression routes into general education 6. Privileges > adequate working conditions and pay for trained staff |
|--|

Fig. 26.3 The “6 P strategy” for VET transfer analysis (Source: author’s own compilation)

aspects will, therefore, need to be added to reflect the country-specific background in any individual case. There are also many different interactions between the six aspects that also need to be reflected. Moreover, a strategy of this kind is not suitable for drawing conclusions about the micro-management of individual transfer projects (see above), which vary too much in terms of the specific context to lend themselves to a general approach. Rather, the strategy sets out the central anchor points (points 2–6) in the context of which the identified needs (point 1) are to be met. Ultimately, it is the responsibility of the stakeholders in the importing country to create the necessary framework. If this cannot be done, then the VET transfer should focus on or be modified in line with the contraindications.

5 Summary

The process presented here comprises a comprehensive analysis of conditions for and structures of vocational training structures in the importing country by means of both a typology and a transfer analysis. Taken together, these elements can fruitfully be used for the export of VET.

It is, however, entirely clear that any individual transfer project is subject to specific conditions and qualifications that require the process to be appropriately adapted. Such adaptation must be undertaken by experts in both the importing country and the country of origin. Limiting factors also need to be taken into consideration. Where the necessary context cannot be created appropriately in the importing country, the transfer activities themselves will need to be adapted to local conditions (see above).

One further aspect also needs to be taken into consideration. The process outlined here is not designed to assess whether any VET system should be transferred in part or as a whole nor which aspects should be transferred. That decision can only be taken within the context of the framework and of the needs identified.

Experience to date shows, however, that it is very difficult to transfer a system such as the German dual VET system in its entirety (Stockmann 2013). Nevertheless, in many cases, individual system aspects can be appropriate for transfer once they are localised (Euler 2013; Mehrotra et al. 2014). In such cases, however, it is essential to warn the partners abroad before any misunderstandings arise, because a partial transfer of a system means also partial transfer of that system's advantages. Moreover, account has to be taken of the interdependencies between systems and the short- and long-term repercussions of the transferred and non-transferred system aspects; where insufficient consideration is given to these, the outcome may be that the entire process is perceived as negative.

It is, therefore, essential that very careful attention is given to planning the scope and necessary country-specific adaptations before any VET export project gets under way and that every effort is made to ensure that the process of achieving results is transparent. Long-term, sustainable success must be underpinned by

mutual trust at expert input and implementation level between the country of origin and the importing country.

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