

Professional and Practice-based Learning

Elly de Bruijn  
Stephen Billett  
Jeroen Onstenk *Editors*

# Enhancing Teaching and Learning in the Dutch Vocational Education System

Reforms Enacted

 Springer

# **Professional and Practice-based Learning**

Volume 18

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Elly de Bruijn • Stephen Billett • Jeroen Onstenk  
Editors

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# Series Editors' Foreword

## Dutch Vocational Education and Training Book

One of the ambitions for this book series is to understand how the development of occupational professional capacities can be best secured. Whilst much of the focus of contributions to this series is upon particular kinds of experiences to realise that development, such as those in work settings and/or educational institutions, it is also important to understand how educational systems are organised and enacted to achieve those outcomes. That understanding needs to account for the range of factors that shapes the manifestation of those educational systems in different countries and how they are transformed over time as their purposes, the institutional arrangements and the imperatives ordering and organising them change. In this volume, the development, and transformation, of the Dutch vocational education system is subjected to such an analysis and from a range of perspectives. Like many others, that system has been subject to waves of reforms in the last three decades. These reforms have led to a particular form of and approach to vocational education premised upon national sentiments, institutions and preferences. Hence, it is quite differentiated from other systems. So, what constitutes the vocational education system in the Netherlands is quite distinct from that over the border in Germany, for instance. Also, the kinds and sets of arrangements which might be found in France, another nearby country, are also quite distinct from those in the Netherlands. So, the detailed examination within this edited volume provides accounts of the particular circumstances in which the vocational education system was initially founded and how it has progressed through government and private sector influences and is also shaped by nationally distinct sentiments such as 'freedom of education' and the strong emphasis on regional or local governance. It is also a system that needs to be able to respond to what is afforded through other education systems and social institutions.

Necessarily, the first contributions set out the context of and form of the provision of vocational education in the Netherlands as it is currently manifested. Given

its country-specific and unique form, much of which is founded on providing pathways through different kinds of education provisions, it is helpful that this system is explained and elaborated first up. Like many others, this system is not always easy to understand from the perspective of the outsiders who may use their own systems for reference points. Then, across a section associated with structural factors associated with organisations and policies and then one focused on the educational programmes and approaches to teaching and the provision of educational experiences, the particular qualities of this vocational education system are elaborated. As befits the project of this book, the contributions reflect the range of factors that influence the form and enactment of this vocational education system and also how it has been reformed and transformed in recent times. These contributions capture something of the diversity of those factors. They extend from changing models of governance in the quest to respond to emerging requirements of the workforce to addressing the needs of the diversity of students that engage in this system with a strong emphasis on pathways to higher forms of vocational education and also higher education. So, as consistent with many other vocational education systems, heterogeneity of student body, diversity of disciplines to be taught, a range of levels of educational achievement and expectations and outcomes are evident in what is discussed. Yet, here there are particular emphases on pathways, localised contributions, engagements with workplaces and other educational systems that make this system quite country specific.

In this way, the contributions to this edited monograph make important additions to our understanding of the way that vocational and professional education is enacted and provide an account of a national system which is complex and nationally and situationally responsive yet is distinct from models that are more frequently the subject of examination and elaboration. All of this is helpful because whilst models from some countries are seen as being the ideal and need to be adopted elsewhere, here, alternatives are offered and an elaboration of why it is not possible, helpful or realistic to impose a model of vocational education taken from somewhere else and impose it upon a nation, workforce and communities that have may have quite distinct premises from those which that model might have been derived. It is these issues of understanding this nation's vocational education system and its particular structures, approach and modes of governance that, beyond the description of the Dutch vocational education system, permit this book to make its important contributions.

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# Preface

## Dutch Vocational Education System and Reform

In the last three decades, the Dutch vocational education system has undergone significant waves of reform driven by global imperatives, national concerns and governmental policy goals. Together, and like elsewhere, the focuses for these successive periods of reform can be seen as being directed to generating a more industry-responsive,<sup>1</sup> locally accountable<sup>2</sup> and competence-based vocational education system. However, each wave of reforms has had particular emphases and directed to achieve particular policy outcomes. Moreover, these reforms were and are currently not merely versions of what had occurred or is occurring elsewhere. They were also shaped by specific national imperatives, sentiments and localised concerns arising from the particular institutional arrangements and specific community needs. For instance, the concept of ‘freedom of education’ is almost unique to the Netherlands, and its implications are that government sets the goals and localised responses are required to address these goals in ways that meet a broad range of interests. Yet, given the extent of these reforms and the demands they have made and changes they have brought about, it is timely to carefully appraise their enactment and outcomes, as they represent a particular set of policy directives that are advanced through a national vocational education system with elements that are common to other such systems, yet also are quite unique. Either way, they represent important and illustrative cases of vocational educational system reform, which are worthy of greater understanding and also from which lessons for considerations by vocational education systems and vocational educators and administrators might well arise.

The reforms of the Netherlands vocational education system in the late 1980s and those across the 1990s largely focussed on structural and institutional

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<sup>1</sup> Here industry refers to both the production of goods and provisions of services, in both the public and private sectors.

<sup>2</sup> Locally accountable refers to meeting the needs of employers in particular locations.



arrangements. This included the introduction of qualification frameworks and competency-based training and assessment, which set this sector of education apart from others. These reforms were far-reaching and disruptive to existing practices within Dutch vocational education institutions and for the practices of those who work and teach in them. Earlier reforms were the subject of critical review in the edited monograph *Unravelling Policy, Power, Process and Performance* (Nijhof & Van Esch, 2004). This volume brought a range of perspectives to the appraisal of such reforms, as the title suggests.

However, the reforms over the last two decades have been of a quite different kind. They have focussed more primarily on the enactment of these earlier reforms at the local level, where they are being implemented, and extend to those focussed on refining and even revising some of the earlier initiatives. For instance, there has been a greater emphasis on the quality of learning and teaching, particularly as they are directed towards securing vocational competence (i.e. vakmanschap). Yet, the qualification structures, as they relate to vocational courses, were revised and refined in the first decade of the new century with the aim of making them more grounded in and aligned with conception of competence as a more holistic account of what purposes vocational education should be directed (i.e. instead of rows of isolated facts, skills).

The focus of the enactment of these reforms over the last two decades was at the local or regional level, including generating the goals and processes at the individual vocational education institute, and course levels. Moreover, these reforms have extended the reach of teaching and learning processes into Dutch workplaces, and the engagement of a provision of work-supported or work-based learning (WBL) vocational education, which is not just a version of the German dual system. Instead, it retains a principal focus of experiences in the school whilst reaching into and providing students with experiences in workplaces. For instance, there is a concern about how to provide authentic occupational experiences in vocational education schools. Then, there has also come fresh imperatives associated with Dutch language and mathematics competence in young people arising from the Programme for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS). All of these imperatives have placed particular emphases on the qualities of teachers in vocational schools and supervisors in workplaces. These focuses are not only quite distinct, from earlier waves of reforms, but are also quite different and even contrary to reforms occurring in some other countries.

Yet, and importantly, what has occurred in the Dutch vocational education system stands as a significant case of reform, resistance, accommodation and transformation that has national, regional, local and personal dimensions, but also offers lessons for vocational educational systems elsewhere. Consequently, understanding the intentions behind these reforms (i.e. what problems were they seeking to address, the ways they were enacted, how they have been experienced and embraced and implemented by teachers and experienced by students and the degree by which the intentions for these reforms have been realised) provides a timely and potentially unique premises for all of these elements to be explored and understood further. So,

although the kind of imperatives referred to above have common resonance across a range of countries and are influencing vocational education systems globally, how all of this plays out is still premised upon the particular initiatives, histories, institutions and practices within each nation state and as manifested locally.

Rather than being merely instances of different stages of development, what is emphasised within the contributions to this edited volume is that there are particular forms of vocational education that arise from particular societal needs, sentiments, institutions and moments. So, although global agencies and even European processes are urging uniformity, such moves stand to comprise vocational education systems that are best fitted to the needs of particular nation states and those who live and work and study within them.

This monograph is directed to accounting for and illuminating the processes, outcomes and dimensions that have comprised the enactment of reforms in Dutch vocational education. Moreover, it seeks to utilise the significant body of research that has been undertaken in the Netherlands over the last two decades in the field of vocational education. This body of work is well placed to provide informed and rich insights that can illuminate these issues and outcomes. This monograph is also founded on some key premises.

Principally, vocational education is held to be an important and worthwhile project for developing the capacities required for meeting societal needs and wants (e.g. social and economic goals) and assisting individuals identify with, become competent in and sustain occupational competence across lengthening working lives (Billett, 2011). Hence, the scope of vocational education extends from guiding individuals to identify to what occupations they are suited and assisting them develop their capacities to effectively practice that occupation, as Dewey (1916) proposed, through to the need to sustain employability across lengthening working lives. In this way, vocational education is concerned with learning about, for and across working lives for all. It follows that national, institutional and personal investments for this project warrant effective practices and policies. Yet, generally, as an education sector, it can suffer from low status, particularly in programmes at the lower qualification levels, negative societal sentiments and often unhelpful regulation and is inadequately supported by appropriate educational practices. However, because of the broad nature of vocational education provisions in the Netherlands (i.e. low status profile courses as well as professional studies that are part of intermediate and higher education), there is a range of esteem measures directed associated with this tertiary education sector that might be absent from some other systems.

In elaborating these issues, this edited monograph offers two major sections with five and six contributions each that address the key theses outlined above and that need to be responsive to the premises outlined above. Part II is on policies and organisations, whereas Part III is on programmes and curricula. The book commences with an overview chapter by the editors that sets the scene, describing the characteristics and participation, the roots and history and the fundamental tensions of the Dutch vocational education system.

The chapters in Part II – Policies and Organisations – highlight the structures and frameworks that have directed vocational education in the Netherlands since the

1990s. Onstenk and Duvekot (Chap. 2) illustrate the role of vocational education at the secondary and higher levels of adult education and lifelong learning (LLL) in the Netherlands. They elaborate policies and traditions and hold that whilst traditionally the emphasis was on what is referred to as formal and non-formal learning in organised settings (adult education), currently there is growing awareness of the importance of learning in the workplace. In their chapter on public-private partnerships, van der Meer, van den Toren and Lie (Chap. 3) focus on how representatives of business and labour traditionally play a role in the definition of qualifications and the access to workplace learning in the Netherlands. They claim that innovation and labour markets differ widely across regions and sectors and present examples of how national policies and local schools need to cope with this diversity. Westerhuis and van der Meer (Chap. 4) elaborate on the developments and practices of cooperation at the local level. In analysing this crucial characteristic of Dutch vocational education, they emphasise its enactment. In their Chap. 5, van de Venne, Honingh and van Genugten discuss issues of governance of schools and colleges in relation to educational quality. In doing so, they also refer to the major transformations in school governance and the increased autonomy of schools and school boards in the Netherlands during the past decades. In the final chapter in Part II (Chap. 6), van der Klink and Streumer discuss the professional development of teachers in vocational education. They state that, thus far, human resource policies have been acknowledged as important for safeguarding teachers' employability and professional growth, but institutional policy plans have not been implemented fully in practice.

Part III – Educational Programmes: Teaching and Learning– discusses the enactment of vocational education at meso- and micro-levels in programmes and curricula. It commences with Chap. 7 that focuses on identity and career learning as aspect of vocational education. Meijers, Kuijpers, Lengelle and Winters state that a strong career-learning environment is absent in most schools for vocational education in the Netherlands and suggest directions for change. In the next Chap. 8, De Bruijn and Bakker address the positioning of occupational knowledge contents from the perspective of the curriculum in vocational education. In overview, they observe a pendulum movement of attention to knowledge in the form of school subject knowledge to an approach in which skills and attitudes received more attention. Chapter 9 engages with competence-based vocational curricula at the school-work boundary. Westerhuis and Zitter elaborate on curriculum development issues in Dutch vocational education with respect to practices of interlinking various learning environments to develop full vocational competence. In Chap. 10, Harms, Hoeve and Den Boer discuss the pedagogical strategies being used in contemporary Dutch vocational education. In doing so, they also show the crucial position of teachers and the different strains put upon them. Chapter 11 analyses the developments and issues with regard to the integration of workplace learning in Dutch vocational education. In this chapter, Onstenk shows how workplace learning has become a considerable part of the curriculum in most vocational programmes, whereas at the same time, the value and quality of workplace learning remain topics of great debate and much experimentation. The final Chap. 12 of Part III addresses issues of assessment. Baartman and Gulikers review the developments in assessment

practices in Dutch vocational education in the past 15 years trying to describe how schools and colleges (re)developed their assessment practices to address the various changes, through a combination of addressing changing policy and scientific research.

As an end piece, Billett (Chap. 13) concludes with a chapter that analyses the features and developments of the Dutch vocational education system from the perspective of a general framework to understand vocational education systems.

In these ways, the book aims to give an overview of developments in the practice of vocational education in the Netherlands since the beginning of this century. It opens up Dutch vocational education as a case study to an international audience. Developments in Dutch vocational education may be recognisable for vocational education in other countries. This is particularly true, whereas the casuistry is accessible on the basis of research conducted. The editors, therefore, hope that the book provides a rich source for learning.

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 25th September 2016

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# Glossary

AD (associate degree)	two-year vocational education programmes in particular for MBO graduates at Level 4 (or sometimes Level 3).
BBL	a work-based (i.e. apprenticeship) pathway within MBO.
BOL	a school-based pathway within MBO.
Compulsory Education	full-time education is compulsory between the ages of 5 and 16 years. That is, all minors are obliged to participate in full-time education for 12 full-time school years. For young people aged between 16 and 18 years, education is also compulsory, until they obtain a starting qualification. Young adults between 18 and 23 years old without a starting qualification are assisted in securing one. For young adults aged up to 27 years and who do not have a starting qualification and/or who apply for social welfare, schooling is also compulsory, until they acquire a starting qualification.
HAVO	general secondary education, a five-year programme; pupils enter at age 12, comprising a lower stage (years 1–3) and an upper stage (years 4–5). Graduates with a HAVO diploma are allowed to enter HBO or year 5 of VWO.
HBO	vocational education as part of higher education (professional bachelor studies), in which students enter after completing HAVO or MBO, Level 4; positioned at ISCED Level 5.

Hogescholen	universities of applied sciences: offering HBO (professional bachelor, professional master, AD); also having research departments.
KBB (Knowledge Organisations for Vocational Education, Training and the Labour Market)	sectoral organisations, which until 2015 were responsible for making qualification profiles and registering learning companies.
Law on Secondary Education (“Mammoetwet”)	it was passed in the 1960s and regulates secondary education with three general programmes at subsequent levels and three (full-time) vocational programmes at subsequent levels.
MBO	vocational education at intermediate level; students enter at age 16, with programmes at four levels, Level 1 and entrance and qualification Levels 2–4; positioned at ISCED Level 3 and 4.
OCW	the Ministry of Education, Culture and Science.
Qualification Profiles	the attainment targets for vocational education are formulated in terms of competencies related to occupational practice. For MBO qualification profiles for all programmes are arranged in a qualification structure for occupations. For HBO qualification profiles are formulated for each programme (professional bachelor or master).
ROCs	multi-sectoral regional vocational colleges.
SBB	(Cooperation Organisation for Vocational Education, Training and the Labour Market) the national organisation that since 2015 has been responsible for making qualification profiles and registering learning companies.
Starting Qualification	a diploma of a programme in secondary education that is by law defined to be the minimum diploma for youngsters to leave the education system. This can be either a diploma HAVO/VWO or MBO-Level 2 (or higher).
VMBO	lower secondary education; pupils enter at age 12, with 4 year programmes, of which the first 2 years focus on general education topics and the third and fourth years are either general or pre-vocational, depending on the students’ pathway. Graduates with a VMBO diploma are allowed to enter MBO. Graduates from the general VMBO programme are allowed to



	enter the upper stage (that is year 4) of HAVO if they have high marks.
VWO	pre-university education, comprising a six-year programme that pupils enter at age 12, comprising a lower stage (years 1–3) and an upper stage (years 4–6).
WEB	the legislation on vocational education and adult education was enacted in 1996 and regulates all vocational education at intermediate level and adult education.
WO	academic education (bachelor- and master-level studies) provided by academic universities; positioned at ISCED Level 6.

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**Part I**  
**Introduction**

# Chapter 1

## Vocational Education in the Netherlands

Elly de Bruijn, Stephen Billett, and Jeroen Onstenk

### 1.1 Vocational Education in the Netherlands

Vocational education in the Netherlands largely developed from private initiatives in the nineteenth century. In the twentieth century, it gradually became part of the public education system. With the growth and inclusion of vocational education as part of public education, tensions developed between “education” and “work” that persist until this time. Vocational education programmes, on the one hand, are required to focus on specific learning outcomes associated with particular occupations, including securing qualifications that certify competence to practice. Being part of a public education system, however, these programmes, on the other hand, generate different expectations. Currently, Dutch vocational education programmes are expected to have broader goals than qualifying for jobs. They are expected to deliver a so called triple qualification: for work and career, for citizenship and social participation, and for further learning and personal growth. Moreover, it can be difficult to adequately prepare vocational students for work, as opportunities for engaging them in occupational practice to get experience, experiment, and practise are not always available. Of course, there are still training programmes within the labour system (e.g., in-company courses) and there are still courses with experiences in both the workplace and educational settings, like dual programmes. Yet, vocational

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education in the Netherlands is a substantial subsystem of the public education system and, therefore, qualifying for work has become a key target. Frictions between the education and labour system have, therefore, become perennial issues and elements of this subsystem of vocational education, which over time are revealed by various ways and for various purposes.

In this chapter, the aim is to introduce the current Dutch vocational education system and discuss how it works. Described within it are important factual features of Dutch vocational education (i.e., positioning in the education system as a whole, characteristics and patterns of participation) and also some fundamental issues that determine the specificity of this system. These issues relate to the nature of vocational education and its being enacted as part of the public education system. Yet, the mere characterization of vocational education as part of a public education system and an indication of tensions between the systems of education and labour are too general statements to capture the complexities and peculiarities of vocational education in the Netherlands. Instead, these general trends and elements need to be described and elaborated in terms of the peculiarities of the Dutch context. From earlier research and evaluations of Dutch vocational education (e.g., De Bruijn, 2004; Nieuwenhuis, Coenen, Fouarge, Harms, & Oosterling, 2012; Nijhof & Van Esch, 2004; Van der Sanden, De Bruijn, & Mulder, 2002; Westerhuis, Christoffels, Van Esch, & Vermeulen, 2015), five categories of issues were identified that capture the characteristics and enactment of Dutch vocational education. These five issues are (a) co-makship, (b) freedom of education, (c) education versus employment imperatives, (d) present or future focus, and (e) lifelong learning. These issues are elaborated here to understand some main underlying premises of the current system.

The first issue is that of co-makship. Schools and companies need each other to enact effective provisions of vocational education, but also to decide upon what should constitute the educational aims of these programmes. In the Netherlands, the relevant actors are interconnected through a so-called public-private frame. Co-makship between education and labour operates within this public frame in ways that make the provision of Dutch vocational education quite country specific.

The principle of freedom of education constitutes the second issue. This principle derives from the Dutch constitution that regulates the extent and degree by which the government can prescribe the purposes and design of education. Publicly funded educational institutes, therefore, have some discretion in organising and enacting their plans for learning, that is, intended curriculum or syllabus and its enactment. This division of responsibilities is reflected in the particular structures and processes of Dutch vocational education.

The third issue underlying Dutch vocational education is the fundamental tension between broad accessibility to educational provisions and qualifying for occupational practice. As part of the public education system, Dutch vocational education has to be inclusive for all young people aged 16 years and older who apply, and must prepare them to enter the labour market as well as make them “ready” for citizenship and further education. Dutch vocational education is shaped by balancing these dual purposes for all students in its programmes. The fourth fundamental issue

is tension between educating for the present and for the future. Vocational education is required to prepare its students for occupational practice in the short term (e.g., getting a job), but at the same time needs to prepare for future challenges by taking into account future economic and societal developments (e.g., by developing capacities to remain employable). This issue is particularly reflected in the design of vocational education provisions and in the relation between what is referred to as generic, or broadly applicable, and as occupational specific knowledge and skills in vocational educational programmes.

The fifth and final issue is the contribution of vocational education to lifelong learning (i.e., learning across the lifespan). Public vocational education, although established to provide initial education, is increasingly being expected to contribute to workers' further professionalization. This double goal is a fundamental issue for Dutch public vocational education, in particular in terms of challenge of its relevance and worth for the future.

All five of these issues are manifested as being multi-levelled and present at macro (system) level, at meso level (i.e., the region and institutes) and at micro (programme) level of the purposes, forms and practices of the Dutch vocational education system. So, although individually some of these issues are far from unique to the Dutch vocational education system, the particular complex of factors together makes its character and enactment quite nationally distinct. Hence, to understand and appraise this vocational education system, such a set of factors needs to be elaborated. In this first chapter, the aim is to define and describe these issues to elaborate a nuanced understanding of Dutch vocational education. The later chapters in the book elaborate and offer more detail about specific aspects of this provision so a more comprehensive account develops. However, before elaborating these five issues in Sect. 1.4, the vocational education system is overviewed in Sect. 1.2 and how this is manifested in terms of current enrolment and patterns of participation is provided in Sect. 1.3.

## **1.2 Vocational Education as Part of the Education System: Origins, Design and Provision**

Qualifying for occupational practice is organised and regulated differently across countries. At a system level, one explanation that accounts for these differences is the positioning of vocational education in the national education system, as well as its relation to the labour market and particular occupational practices (Marsden, 1990; Müller & Shavit, 1998). Some countries are characterized by having a labour market system in which qualifying (i.e., securing that you are competent) for occupational practice is part of the first phase of a working career itself, so after entering the labour market and getting a labour contract. These countries have an underdeveloped public system of vocational education and an internal labour market exists, as qualifying for work focuses on the companies in which people work. The United States and United Kingdom are examples of such liberal market economies with an

internally focused labour market, except in some technical sectors where there exists (or existed) apprenticeships. Initial (public) education in these systems focuses on the acquisition of general skills and knowledge. The skills workers develop in and through their work are often company specific and, therefore, are seen as less relevant for the external labour market. At the same time, there are few regulated occupations whose practice is dependent upon securing particular qualifications. So, in such de-regulated circumstances, certified entry-level qualifications are not a requisite for securing access to specific kinds of employment. Hence, if employment is available, it is relatively easy for young people to get access to work, except that demonstrable experience is often required in place of qualifications.

Conversely, other countries have a regulated occupation-based labour market in general and a well-developed system of vocational education at intermediate level (Van Lieshout, 2008). Occupational qualifications are used by employers to define jobs and to select candidates for these jobs. Germany and the Scandinavian countries are examples of coordinated market economies with an occupation-based labour market with strong institutional links between representatives of the labour market and educational processes.

Dutch educational and training provision in that respect could be characterized as a hybrid system of vocational education that is steered and shaped by arrangements in which governments and social partners cooperate to provide labour market-relevant initial vocational education for mainly young people, whilst also preparing them for participation in society and also further study. Hence, the Netherlands has a country-specific profile because of its public provision of an intermediate level of vocational education that also offers subsequent routes in higher (professional) education.

The distinct vocational education profile within the Dutch education system has its recent origins in the Law on Secondary Education (“Mammoetwet”) which was established in the 1960s. Full-time vocational education, as it existed at that time, was organised for the first time through provision of an overarching law which regulated the interconnections between various educational programmes in a coherent design of secondary education.

Figure 1.1 depicts the system design of secondary and tertiary education in which children enter at age 12 after completing primary education (i.e., age 4–12). The outline of the system in Fig. 1.1 shows the differentiation in level and nature of these programmes. Students can choose a pathway that is predominantly vocational (i.e., occupationally specific) in emphasis (i.e., the left side of Fig. 1.1), predominantly general educational in emphasis (i.e., the right side of Fig. 1.1) or mixed (i.e., following the arrows in Fig. 1.1 that cross over). Pathways include programmes at two or three levels: lower secondary education (i.e., referred to as pre-vocational or junior general programmes in Fig. 1.1); upper secondary education (i.e., referred to as senior secondary vocational or general education in Fig. 1.1); and higher education (i.e., either named professional or academic as depicted in Fig. 1.1).



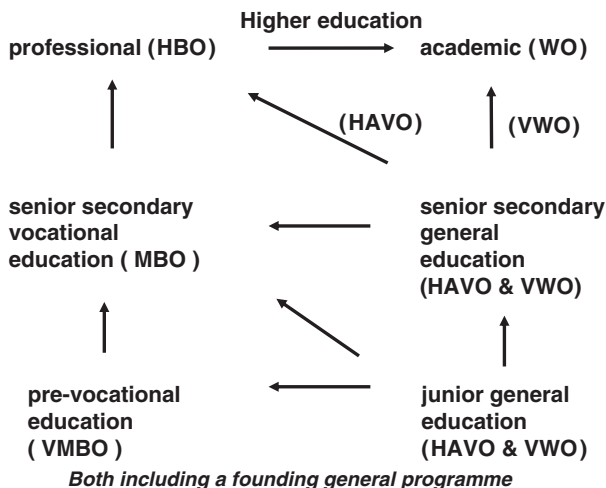
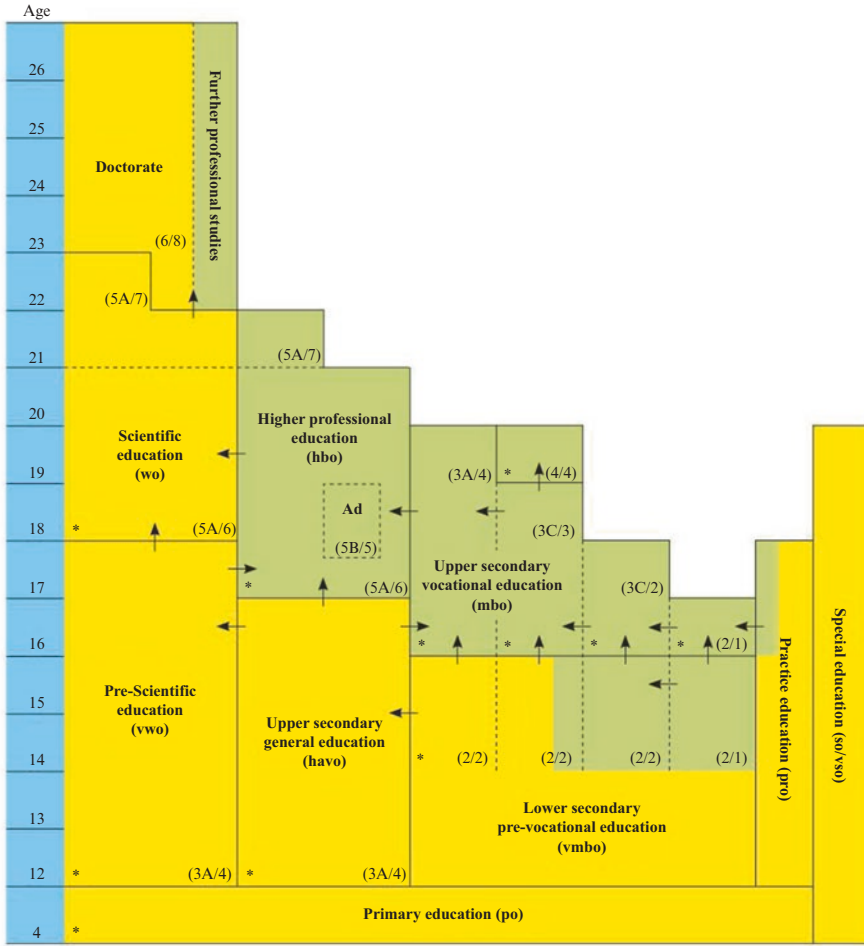


Fig. 1.1 Design of Dutch education at secondary and tertiary level using current acronyms (De Bruijn, 2006)

From the 1960s onwards, the design of the Dutch education system beyond primary education has three main characteristics (cf., De Bruijn, 2006; Van Kemenade, 1981):

1. *Early tracking*: At the age of 12, children and their parents select a type of secondary education, either a pre-vocational, general or pre-university programme, in which to participate. Each programme at lower level has follow-up programmes in upper secondary education. In this way, choices at age 12 foreshadow future educational careers. Hence, the system is characterized by early tracking of careers.
2. *Combination of general and vocational education*: Each pathway through the education system starts with a general educational programme in lower secondary education, even in the occupationally oriented pathway at the left side of Fig. 1.1. Each starts with a basic general programme (the first 2 years of VMBO are general too) and results in a qualification for the labour market either after completing secondary education (MBO) or after completing education at tertiary level. From the perspective of the designers of the system, the latter indicates that academic education is perceived to (also) lead to employment. In addition, leaving the system with a qualification of general education at secondary level is not an intended educational outcome.
3. *Transfer opportunities*: Transfer from one pathway to another or within pathways is possible at various stages as part of the system design. These opportunities for transfer create a system where no dead ends are held to exist. That is, all pathways are held to provide opportunities to enter higher education. Ideally, these transfer opportunities can compensate for early choices at age 12, and any deleterious effect of inappropriate early tracking.



\* Corresponding adult education at this level.  
 Number between brackets: (ISCED-level/EQF-level).  
 → Transfer possibilities.

**Fig. 1.2** Dutch education system (Source: Van der Meer and Smulders (2014), *OECD-review: Skills beyond school – National background report for the Netherlands*, Hertogenbosch: Ebo)

From the presentation of these three characteristics of the Dutch schooling system design, it is evident that the system is highly stratified with a relatively strong vocational orientation. Figure 1.2 depicts the designated pathways in more detail and as the system currently exists. It is still possible to recognize the impact of the “grand design” of the 1960s in the contemporary structures.

In terms of transition routes, the education system is organised in three layers with primary education at the bottom. The layer above it comprises two sub-levels: lower and upper secondary education. The differentiated programmes are:

- VMBO (lower general and pre-vocational 4-year programmes) that predominantly prepare for upper secondary vocational education (MBO, ISCED Level 3 and 4). MBO comprises 1–4-year programmes at four qualification levels with Level 1 being entrance courses and Level 4 qualifying both for work and higher professional education (HBO, associate degree and professional bachelor, ISCED Level 5);
- general secondary education (HAVO), a coherent 5-year programme that prepares students for higher professional education (HBO/professional bachelor, ISCED level 5); and
- pre-university education (VWO), a coherent 6-year programme preparing for academic education (WO/academic bachelor, ISCED Level 6).

Although pathways in secondary education differ in length and number of transitions, in its design each pathway offers opportunities to enter higher education. Further on in the chapter, we will see that actual patterns of participation differ from this design and, moreover, that over time policies have either facilitated or hindered these pathways becoming a reality.

The third layer of the Dutch education system is higher education, which in the Netherlands has a binary structure. Universities of applied sciences offer higher professional education (HBO) including 2-year associate degree courses, 4-year professional bachelor courses and a limited number of (part-time) professional masters. Entrance to professional masters (HBO) is for workers in the occupational field who hold a bachelor degree. Academic universities offer academic bachelor courses, academic masters and PhD programmes. Graduates from VWO and those who successfully completed the first year of professional bachelor studies are permitted to enter academic bachelors. Those who hold an academic bachelor degree and those who successfully completed a pre-master programme are permitted to enter academic master programmes. PhD programmes are open for holders of a master degree (either academic or professional).

Changing pathways is possible at particular points along the way. At the end of lower secondary education, students from the general stream of VMBO are allowed to enter upper secondary general education (Year 4 HAVO). This articulation also works the other way around. That is, those who successfully completed lower general education within HAVO or VWO (3 school years) are allowed to enter MBO courses at Level 2, 3 or 4. At the end of upper secondary education, both graduates from MBO qualification Level 4 courses and HAVO/VWO graduates are allowed to enter higher professional education (HBO, associate degree or bachelor courses). During tertiary education, changing pathways is possible for students from professional bachelor programmes who do not have a diploma of pre-university education (VWO). They gain entrance to academic bachelors after successfully completing the foundation year (first-year exam). Graduates from professional bachelors have to complete a pre-master programme (of approximately one year) to enter an academic master.

In this book, we concentrate on Dutch vocational and professional education within the public system at ISCED Levels 3–5; that is, MBO and HBO. From here

we use the term “vocational education” to emphasize that the various educational programmes primarily aim to prepare and qualify directly for work. This delineation of vocational education implies that prevocational education will not be discussed further as its function is preparatory for subsequent educational programmes. Academic education is also excluded from the discussion here, although professional studies are also part of this level of education. As for higher education, we only include associate degree courses and professional bachelors that have direct applicability to employment and specific forms of employment and hence fall under the ambit of vocational education.

The current public provision of vocational education at intermediate level and professional studies in higher education has evolved over the last 50 years. A 100 years ago, the public education system in the Netherlands did not offer any vocational programmes. At that time, qualifying for work was not perceived to be a state responsibility. Subsequently, most vocational programmes originated from the labour and welfare system, and became part of the education system many years afterwards. In 1919, the first legislation of vocational programmes qualifying for craft-related and industry work were established at two qualification levels (low and intermediate). Then, after the Second World War, in the 1950s – known as the “rebuilding years” – high-quality educational programmes that qualified students for work was seen as a societal necessity. Public financing of vocational education programmes became more common. Furthermore, differentiation in levels (i.e., low, intermediate and higher) of vocational education programmes developed. As noted, with the implementation of the law on secondary education in the 1960s (the second system law; the first being the one on primary education), the majority of vocational education programmes were regulated for the first time as part of the national public education system. The predecessors of the prevocational VMBO programmes, (full-time) MBO and HBO, became programmes within secondary education, which were formerly programmes at respectively low, intermediate and high qualification levels. The apprenticeship system was not included in this law. However, it also came under the influence of the public sector through a separate law that stated that the supervisory tasks for apprentices and the school part of the programmes were to be facilitated by public funding.

In later years, both MBO and HBO were arranged in separate laws. In the 1980s, HBO was regulated separately from secondary education; schools offering these professional studies were named “Hogescholen”. At this time, the many occupation-specific schools merged into big, multi-sectoral tertiary education institutes. In the beginning of the 1990s, a new law on higher education and scientific research (the third system law) regulated both HBO and academic universities (WO). Thus, the binary structure of Dutch higher education was created by this law at this time. The binary structure accommodates aspects of both education and research in these institutions. From 2000 onwards, HBO institutions received some public funding for research and established small research departments. From that moment onwards, many Hogescholen changed their name to universities of applied sciences.

The integrated system of vocational education in the Netherlands is relatively recent. As of 1996, various vocational educational paths and school types (apprenticeship system and school-based vocational education; initial and adult vocational education) were all integrated into a single vocational education and training (VET) system. This system law (abbreviation: WEB) created, for the first time in the Netherlands, an integrated system of senior secondary vocational education (MBO), bringing the formerly separate systems of school-based VET and work-based apprenticeship into a single system (Onstenk, 2004; Nijhof & Van Esch, 2004). Different types of schools, branches, curriculum designs as well as combinations of school-based and work-based educational provisions were integrated under a single national qualification structure. Dutch full-time vocational education had, compared to other countries, already a relatively large practical component. The WEB made workplace learning an essential part of every senior secondary vocational education and training programme. There are two educational pathways: a school-based pathway (BOL) and a work-based (i.e., apprenticeship) pathway (BBL). Both pathways combine learning in school and in workplaces, but in different proportions. The school-based pathway includes workplace experiences for 20–60% of the total curricular time. Since 2005 the average percentage of time students engage in work over all courses in all sectors has risen to more than 50%. However, lately this percentage has diminished somewhat as a result of a new emphasis on (theoretical) knowledge. The work-based pathway includes apprenticeship in a company for at least 60% of the time, as well as a 1- or 2-day school release. In both strands, regional VET Colleges deliver the school-based component, but bear responsibility for the whole learning process as well as for awarding the qualification. In senior secondary vocational education (MBO) training programmes and qualifications are offered in four different fields: (a) technology, (b) commerce/administration, (c) services/health care, and (d) agriculture. Training courses are provided within the framework of the national qualification structure for vocational education at four different levels, ranging from entry and basic vocational training (1 to 2 years) to craftsman and middle management training (3 to 4 years). Level IV qualifications give entry to higher professional education.

**Fig. 1.3** Short description of Dutch MBO

It took some more time before MBO was regulated in a separate law (see Fig. 1.3 for a concise description of MBO and its development). In the 1990s, the fourth system law came into force, regulating vocational education at intermediate level (i.e., full time, part time or apprenticeship/dual), adult education (i.e., second chance general education, and (language) education for new migrants). Thus, in 1996, by law, all existing vocational education at intermediate level, including the apprenticeship system, was transferred into one unified system. Or, to be more exact, from 1996 onwards, the process of shaping such a unified and integrated system commenced. As part of this development of a unified system of intermediate vocational education, regional vocational colleges were established. Over the next few years, the highly differentiated small and specific schools were transformed into an institutional field of multi-sectoral regional colleges (ROCs).

In sum, this section has attempted to outline and overview the design and structure of the Dutch education system by three key principles, namely early tracking, transfer opportunities with no dead ends, and pathways starting with general education and ending with qualifying provisions aligned to the labour market. As a result, the structure and ordering of the Dutch education system can be characterized as being highly stratified and with a strong vocational (i.e., occupational) orientation. Described here also is how the Dutch vocational education system developed from private initiatives and has currently become positioned within the public education system at the upper secondary and tertiary levels. The Netherlands have a partly occupation-based labour market and vocational education operates within a private-public frame in which social partners, schools, and government cooperate. In these ways, the Dutch vocational education system is acknowledged as being relatively unique because of its extensive provision at intermediate level and access to higher (i.e., professional) education. In the next section, we elaborate the participation patterns to see how the design of the system works out in practice.

### **1.3 The System in Practice: Participation in Vocational Education**

Participation in Dutch vocational education as delineated in this chapter (and book) is mostly by young people of 16 years and older, but also by a small number of young working adults. Most young people participate to obtain a starting qualification (i.e., a diploma of a programme that is by law defined to be the minimum qualification for young people to leave the education system, being a diploma of HAVO/VWO or MBO Level 2). In the Netherlands, there is a distinction between compulsory education and schooling to obtain a starting qualification. For minors between 5 and 16 years of age, full-time education is compulsory, and every minor is obliged to participate in full-time education for 12 full-time school years. For young people aged between 16 and 18 years education is compulsory until they obtain a starting qualification. Young adults between 18 and 23 years old without a starting qualification are assisted in securing one. Schooling is compulsory for young adults aged up to 27 years who do not have a starting qualification and who apply for social welfare, until they acquire a starting qualification.

For many participants in MBO and HBO, schooling is not compulsory and a portion of them already obtained an initial qualification as defined above (i.e., MBO diploma at Level 2 or a HAVO/VWO diploma). A portion of these students enrol because they want to move to a next step/level in their educational career prior to commencing work (i.e., initial education), and a portion of them participate as workers who want to qualify further for professional life (i.e., post-initial education). However, as workplace learning experiences are becoming a growing part of vocational education in the twenty-first century, this distinction between initial and

**Table 1.1** Participation figures in senior secondary and higher education (CBS, Statline; MBO online)

Participation in 2014/15	(Pre-)vocational	General academic
Senior secondary (age 16 and older)	492,000 (MBO)	235,000 (year 4–6 HAVO/VWO)
Tertiary (higher education)	447,000 (HBO)	254,000 (WO)

post-initial vocational education is now blurring and the distinctions between these participation patterns become less clear.

Participation numbers in both MBO and HBO increased rapidly during the 1970s and 1980s. This increase was a combined effect of introducing part-time compulsory education for young people aged 16 and 17 years of age (in 1975), enlarging the provision of MBO with full-time programmes at qualification Level 2, and a global trend to lengthen educational careers (De Bruijn, 1997). However, currently, the intake in MBO is decreasing, although not in the full-time programmes leading to qualifications at Level 4, as these are very attractive because of their dual qualification outcome, that is, for occupational practice and further study in higher education (see Table 1.1). The levels of intakes for HBO are currently increasing more gradually and often stabilizing. Demographic patterns in the current decade and particularly the ageing population are key contributors to the stabilization of the number of participants.

MBO is the second largest sector in Dutch education (primary education is the largest) and HBO the third. To indicate these levels of participants, Table 1.1 presents the participation figures for 2014/2015 of the various programmes at senior secondary and tertiary level.

As noted above, the Dutch education system is relatively strongly occupationally oriented although the lower secondary level pathways commence with general education. This quality of the Dutch education system is reflected in the actual patterns of participation. Between 70 and 75% of the age 15 cohort is enrolled in lower general education (Statline/CBS, 2015).<sup>1</sup> Yet, by age 17, about 60% of the cohort is enrolled in vocational education programmes and by age 18 the level of enrolment is 70%. Most participants in these vocational education programmes are younger than 23 years old, and are particularly participating in full-time programmes.

To indicate the size and importance of vocational education from the perspective of the labour market, the education levels of the workforce are illustrative. In 2015 around 55% of the working force was qualified at MBO Level 2 to 4 or HBO (De Graaf-Zijl et al., 2015). Furthermore, from an international perspective, classifying MBO 4 qualified as intermediate qualified professional actually downplays the extent of the vocational education programme as in other countries workers with these qualifications are classified as higher educated professionals (OECD, 2013 in De Graaf-Zijl et al., 2015).

<sup>1</sup>VMBO includes prevocational programmes and general ones; the general programmes have considerably higher numbers of enrolment (nearly 70%) than the pre-vocational ones (over 30%).



Information about patterns of participation, in particular at the transition movements, is important for understanding and gauging how the design of Dutch education actually fulfils its goals as set out in the earlier sections. Three transition moments are relevant in these considerations as these moments are crucial in the educational careers of young people (as depicted in Figs. 1.1 and 1.2):

1. Transition from lower secondary education (VMBO or the first phase of 3 years HAVO/VWO) to upper secondary education (MBO or second phase of two to 3 years HAVO/VWO);
2. Transition within MBO after completing programmes at qualification Level 2 and 3, and transition from MBO programmes of qualification Level 4 to HBO; and
3. Transition after completing HAVO or VWO, either to higher education or MBO Level 4.

To understand the student flows at the first transition moment (from lower secondary to upper secondary education), it is important to consider that general programmes are those with the largest number of students. VMBO comprises both prevocational and general programmes. Since the 1960s, levels of participation in the former (and its predecessors) have diminished (De Bruijn, 1997; Meijers, 1983; Westerhuis & De Bruijn, 2015), whereas participation of young people of 16 years and older in (vocational) education increases; at age 12, children and their parents tend to prefer a more broad and general educational programme that keeps open all further educational possibilities until the age of 16. Furthermore, advisory boards of government, various political parties and prominent intellectuals and leading media stress that the growing dynamics and complexity of society demand an educational programme in lower secondary education that provides the foundations for further education; the advice is also that postponing school choice will support children from disadvantaged groups. It is predicted that by 2030, enrolment in these prevocational programmes will be very low, about 10–15% (Westerhuis & De Bruijn, 2015). Westerhuis and De Bruijn assume that by 2030 the patterns of participation in lower secondary education (for young people aged between 12 and 16 years) in the Netherlands will be quite comparable to other OECD countries. However, until then, the international average percentages are lower than the Netherlands for enrolment in occupationally oriented programmes or subjects in lower secondary education which stand at around 4% across all OECD countries (OECD, 2014a).

After completing VMBO, nearly all students enter upper secondary education, with most entering MBO. The vast majority of graduates from the general VMBO programmes also enter MBO. A percentage of graduates from the general VMBO programmes (i.e., those with high school marks) enter upper secondary general education (HAVO) which after some fluctuations comprises a relatively stable 20%. The success rate of these VMBO graduates in HAVO is slightly lower than their counterparts who commenced at age 12. The main reason for this outcome is that many HAVO schools do not allow VMBO graduates to repeat HAVO Year 4 again if they fail the first time, whereas HAVO students enrolled in HAVO already in the lower phase are allowed to repeat. As for students from the lower phase of HAVO/



VWO, most continue with the upper phase of HAVO/VWO. However, a small percentage of these students enter MBO. In fact, entering MBO is mostly the consequence of not being able to complete HAVO one way or another. Over time, the percentage of HAVO/VWO drop outs (particularly after HAVO Year 3 or 4) entering MBO is roughly 40%. Around 25% of the HAVO students who failed their exams enter MBO and 50% enter general education for adults to obtain their HAVO diploma via this alternative route (Statline/CBS, 2015). For VWO students who fail their exams, continuing with MBO is mostly not an attractive option and most enter general education for adults or try again next year.

The second cluster of transition moments that is relevant to understanding the Dutch education system in practice are those within MBO between the various program levels and the transitions from MBO to higher education (HBO). As explained in Sect. 1.2, MBO comprises educational programmes at four qualification levels. Programmes at Level 1 are entrance courses and do not prepare for qualified work. Programmes at Levels 2, 3 and 4 qualify for jobs at corresponding levels and, as discussed, can be obtained via two different educational pathways, that is, either through full-time education with a substantial component of workplace learning in terms of placements or apprenticeship/dual programmes in which students are employees. Since the 2010s, combinations of the two educational pathways (e.g., first part full time and final part apprenticeship) have been made possible and are more frequently enacted. Participation in full-time programmes outnumbers those in apprenticeship programmes although enrolment figures are also influenced by economic circumstances and times. In 2010, approximately two thirds of MBO students were enrolled in full-time programmes (foremost at Level 4) and one third in apprenticeship programmes (foremost at Level 2). The prediction is that by 2020 the proportions will be around 20% apprenticeship and 80% in full-time programmes (Neuvel & Westerhuis, 2013). It should be noted here, however, that full-time programmes also have a large component of work-based experiences (on average 40–50% of the time). Participation is not symmetrically divided across qualification levels. In 2013, 75% of the students are enrolled in programmes at qualification Level 3 and 4 and over 20% in programmes at Level 2. Participation rates in full-time programmes at Level 4 are highest, about 40% currently, and the numbers are still increasing, whereas participation in programmes, in particular apprenticeship programmes at Levels 2–3 decline, also because of demographic changes (KBA, 2014; Van der Meer & Smulders, 2014).

MBO graduates at any level are allowed to enter programmes at the next qualification level, which, in principle, makes pathways possible from MBO Levels 2 to 4 that, subsequently, give access to higher education (i.e., professional bachelor programmes in HBO). In 2010, about 50% of the students who started in MBO with a programme at Level 2 proceeded with a programme at Level 3 or 4. Of the group that proceed, 60% succeed (Van Wijk & Schouten, 2013). In general, success rates are highest of MBO 2 to 3 tracks (mostly apprenticeship) and MBO 3 to 4 tracks (mostly full-time programmes). Noteworthy here is the apparent watershed existing between Levels 2 and 3, also related to the nature of the pathways.

Cohort studies are helpful to identify how planned educational pathways work out in reality. From two cohorts of students (2005 and 2006) who left VMBO and entered MBO the actual tracks are known (Neuvel, in Westerhuis & de Bruijn, 2015). These show that:

- Graduates from general VMBO programmes more often start with MBO programmes at Level 4 than graduates from prevocational VMBO programmes (even if their admission qualification is formally equal): at 60% versus 40%. Subsequently, graduates from prevocational programmes start more often at Levels 2 or 3 which causes more transition moments during their educational career, if they want to proceed after having completed these programmes.
- Graduates from prevocational VMBO programmes enter HBO less often than graduates from general VMBO programmes: at approximately 20% versus more than 40%.

Thus, although there are no dead ends in the design of the Dutch education system, the pathways through the system are sometimes hard to realize, particularly when the commencement point is in the prevocational track in VMBO and/or at MBO Level 2. The key barriers appear situated within MBO. Participants in a MBO 4 programme have multiple potential outcomes because graduates have a relatively good prospect for employment and their qualification also opens up possibilities for further education. As for the transition from MBO Level 4 to HBO, approximately 50% of the graduates of full-time programmes succeed and between 10 and 15% of graduates from apprenticeship programmes. It is to be noted that the latter programmes are specialist training and the enrolment numbers are low; about 70% of the participants are workers who are at least 23 years old and have not been enrolled in formal education for at least 4 years.

The numbers of MBO graduates from full-time programmes at qualification Level 4 entering HBO have been decreasing over the past decade, yet still constitute a substantial number. In terms of HBO starters (either associate degree or professional bachelor) the percentage with a MBO 4 qualification is relatively stable: in 2005 it was 28% and in 2014 30%. The MBO Level 4 graduates who do not proceed with their educational career directly have a relatively good prospect of securing employment in the labour market, and ample opportunities to catch up schooling later or take up other courses at post-MBO level. A MBO diploma of full-time programmes at qualification Level 4 is a double qualification as it certifies for participation in the labour market and also higher and further education and training. The success rate of MBO 4 graduates in HBO, however, is lower than of HAVO graduates. In particular, this appears to be caused by the number of MBO graduates dropping out in the first or second year of the professional bachelor for various reasons. These include duration of the bachelor study after having completed MBO, difficulties with the academic elements of the bachelor study, attractiveness of the labour market, or a combination of pull and push factors. MBO graduates seem particularly interested in the (shorter) associate degree programmes; a number of graduates from associate degree programmes proceed within the bachelor and complete the full bachelor programme after all.

The third cluster of relevant transitions relates to the further educational career of HAVO/VWO graduates. From the 1980s till the beginning of the 1990s, the number of HAVO graduates who entered (full-time) MBO programmes at qualification Level 4 rose to 30% (De Bruijn, 1995; De Bruijn & Voncken, 1998). Some 50% entered HBO at that time. From the mid-1990s onwards, the percentage of HAVO graduates who entered MBO reduced, ending up at 5% in 2004 and 3% in 2011. The number of HAVO graduates entering HBO in this period rose to 79% in 2004 and 78% in 2011. These developments are presumably the combined effect of (a) the implementation of the new Law of Vocational and Adult education (WEB) in the 1990s in which the constituting parts of MBO (i.e., apprenticeship training, schools for Level 2 full-time programmes and schools for Level 4 full-time programmes) were integrated, and (b) a change in the curricula in upper secondary general education aiming for a better preparation for higher education (Moerkamp & De Bruijn, 1999). These changes enabled HAVO graduates to more frequently proceed with HBO. According to the design of the education system and policies of the 1990s, HAVO graduates should follow up their educational career with HBO and not with MBO. Patterns of participation should become more efficient, following the designed pathways and not “piling up” diplomas as HAVO graduates were doing before, taking the “more easy way” through the system by first doing MBO to be sure to be successful in HBO or at the labour market. The same process is visible with VWO graduates, although less dramatic. In the beginning of the 1990s, nearly 30% of the VWO graduates entered HBO (professional bachelor). This percentage dropped from 1995 to 15% in 2004 and 12% in 2011. About 85% of VWO graduates now enter academic university (i.e., WO).

In this section, the patterns of participation in Dutch education were presented. It showed how vocational education has a crucial position in providing opportunities for promising educational careers and prospective labour market positions. The system is designed to avoid educational dead ends. However, it is less effective in its realization. Early tracking foreshadows pathways and makes some careers, if not dead ends, difficult. It enhances the risk of participants leaving the education system before some qualification is acquired. There is a clear shifting pattern of participation as students and their parents prefer general education in lower secondary education as a strategic decision to secure a pathway to higher educational levels. In senior secondary and tertiary education there is no such shift; enrolment in vocational programmes outnumbers by far enrolment in (pre-) academic education. It should be noted these vocational programmes are mostly full-time programmes with a large component of workplace learning and preparing for occupations at intermediate and higher qualification level. It might be concluded that the Dutch education system can be characterized both in its design and its realization as being highly stratified and with a strong vocational (i.e., occupational) orientation, the latter in particular at senior secondary and tertiary level.

Following from this outlining of the Dutch vocational education with respect to its design, roots, provision and participation, the next section identifies key issues.

## 1.4 Fundamental Issues of Dutch Vocational Education

This section presents vocational education in the Netherlands as it is influenced by the underlying principles and tensions that were sources of its current structuring and forms. Consequently, current practice, recent developments and debates are discussed, organised around five fundamental issues of Dutch vocational education as defined in the introduction of this chapter: (a) co-makership, (b) freedom of education, (c) accessibility versus qualifying for occupational practice, (d) educating for the present and for the future, and (e) vocational education and its contribution to lifelong learning. The aim is to provide a nuanced understanding of Dutch vocational education that is elaborated in greater detail across the contributions to this book.

### 1.4.1 *Co-makership*

The provision of vocational education in the Netherlands is a product of cooperation amongst various stakeholders within a public frame (i.e., regulations by government and law). The public frame is reflected at all levels: at macro level in legal regulations, in conditions for quality assurance and public responsibility at meso level, and at micro level in frames for designing programmes (e.g., number of contact hours, qualifications of teachers). Within these public frames, stakeholders from education and labour shape and specify vocational education provisions and structures. Hence, it is possible to define Dutch vocational education as an education system that operates in a public-private frame where social partners (i.e., organisations of employers and of employees) and education cooperate, within the legal space that law and government provide and regulate.

Interactions between partners within this public-private frame are not straightforward and often cause frictions. These frictions can be illustrated by the developments and debates with respect to the qualification structure for MBO. As recalled earlier in this chapter, the implementation of the vocational education law (WEB) in 1996 promoted the integration of all vocational education at intermediate level, regardless of whether it is full time, part time or apprenticeship. The challenge at that time was to create a coherent system. The key instrument to realize that objective was assumed to be a qualification structure in which all levels of qualification were to be organised in relation to occupations, with two equivalent pathways of education (full time and apprenticeship) to obtain certification for these qualifications. Occupational branch-specific knowledge centres, in which social partners and education were represented, had the task of making detailed proposals for qualification profiles that subsequently were established by the government. In this procedure, which is essentially also the current one, social partners are important actors, because they bring in dynamics and needs of current occupational practice. For full-time and part-time MBO, this procedure to define and establish attainment

targets was innovative at that time. Equally, the apprenticeship system became part of the education system, while until that time it had been steered by the social partners themselves. Two types of logic, that of labour and that of education, were brought together in one system through these reforms.

In 1996, it was proposed that the national qualification structure would be an effective means to regulate interactions between both of these systems (i.e., education and labour). However, the various stakeholders interpreted the qualification structure quite differently. So the nature and content of the qualifications and structures were consistently the subjects of debate. Ideally, the qualification structure should be a means for communicating the connection amongst vocational programmes, labour market and occupational practice; instead, it turned out to be a means for stakeholders to express their own expectations and demands. For social partners, the qualification profiles formulate qualification demands for graduates entering employment. For educational institutes, qualification profiles are frames to design programmes and exams (Van Lieshout & Scholing, 2009; Van der Meijden & Petit, 2014). Social partners also want qualification profiles to be transparent and to reflect the kinds of performances they endorsed. Contrarily, educational institutes want qualification profiles that offer opportunities to design vocational programmes that are not too specific in aims and content and that can be implemented in an education-based curriculum with pre-specified knowledge and skills.

In the 2010s, the tentative outcome is a qualification structure whose nature and content is characterized by a relatively strong education logic in which parts also leave space to accommodate a labour logic. This compromise fits in a more general trend to replace the national steering of the focus and design of vocational programmes with an emphasis on decision-making at the regional level. It is striking that co-makership in the region was one of the main features of the apprenticeship system as it was enacted prior to 1996. As a consequence of the integration and public framing in the 1990s, however, the infrastructure of the apprenticeship system at local level was discontinued. Being an autonomous provision, the apprenticeship system was able to transform into one of the two educational pathways in MBO (i.e., full-time programmes and apprenticeship training). In the 1990s, the national infrastructure of the apprenticeship system was expanded to full-time education, but has subsequently transformed into an overarching and uniform structure to control the quality of placements in companies (Onstenk, 2016b).

The general picture is that from the moment of integration of vocational education at intermediate level in 1996, at first, national economic stakeholders had a significant role in steering the process and there was less influence from local organised economic actors. More recently, the influence of economic actors at local level has increased (Westerhuis & Van der Meer, 2016). The actual influence of local industry, enterprises, and supervisors at the workplace in designing, guiding and assessment tasks in vocational programmes is, however, dependent on the attitude of institutes, managers and teachers in vocational education, because ultimately (public) educational institutions are responsible for student graduation. Yet, as workplace learning is a substantial part of vocational programmes and as graduates have to find employment in the region, educational institutes are aware they have to

cooperate with companies and employer organisations to deliver responsive vocational education.

For HBO, co-makship between education and labour organisations has a very different history and tradition. Although HBO and MBO have comparable origins, as sketched in Sect. 1.2, the framing of HBO as higher education led to a quite different development. HBO, in fact, was incorporated in the tradition of academic education, in which educational logic prevails and labour logic is not present. Furthermore, higher education has a less strict governmental interference compared to MBO.

At a system level, there is no formal influence of economic actors. Decisions about aims, goals and content of programmes are at the discretion of the universities of applied sciences. Over the years, a macro-functionality test was established, when public funding of a new programme is requested, in which the government demands proofs of labour market needs for the new programme. A public-private cooperation has never formally been arranged for HBO. Because of the nature of its programmes, namely education qualifying for occupations, involvement of economic actors with HBO appeared to be persistent over time (i.e., it has remained from the past when HBO was organised in occupational domain-specific schools) or eventually developed (again). This involvement and cooperation is most prominent at the regional level and not so much at the national (although there are some national competence profiles, formulated in cooperation with business and professional organisations). In many ways, this regional engagement is consistent with the more autonomous roles of the applied science universities, which differentiates them from the vocational colleges for MBO (ROCs).

The debate about the competence and qualification of educators in vocational education is another illustration of the public-private frame in which co-makship between education and labour is enacted (Van der Klink & Streumer, 2016). From the perspective of educational logic, a general competence profile and a qualifying pathway provided by a formal teacher education institute is seen as the most effective one. Such a preference naturally counts for the teachers who, from this perspective, are seen as most important educators for vocational education. From the perspective of labour logic, specific expertise of occupational subjects and practice are perceived to be essential for vocational educators, including supervisors at the workplace who are held to be as important as teachers in schools (cf., Aalsma, Van den Berg, & De Bruijn, 2014). In MBO, the public frame is relatively prescriptive and, therefore, qualification profiles of many teachers are to a large extent general or broad. The premise is that education staff other than teachers (e.g., practical instructors) and supervisors at the workplace will provide the necessary specification of vocational knowledge, skill and practice. However, the debate on this issue is perennial and the actors involved take different positions, and these can change over time. At the local level, the discrepancy is less evident than at national level; schools experience the necessity of using both general teaching expertise and specific vocational know how. In the provision of teacher education, it is problematic that there are only a few qualifying teacher programmes for vocational subjects in MBO; most teacher education programmes are qualifying for general subjects for



secondary education and MBO with only some differentiation at the end of the programme.

In sum, the concept of co-makership refers to the relations among the social partners who initiate, advance and enact vocational education programmes. Yet, these relationships are far from uniform or straightforward. They differ across levels of education and the balance between the logic of education and industry, with HBO having the strongest emphasis on the educational side. Also, these relations play out differently between national prescriptions and localised decision-making and discretion in the regions.

### 1.4.2 *Freedom of Education*

The Dutch concept of freedom of education is deeply related to the so-called “school war” on religious grounds at the turn of the twentieth century. In this school war, three sorts of freedom were central: (a) freedom of choice (of school); (b) the freedom of foundation (i.e., the freedom of parents to establish a school on the grounds of a specific view of life); and (c) freedom of organisation (i.e., the freedom of managerial and educational organisation of a school which applies to contents of learning, methods and personnel). The public funding of schools is expected to respect these three types of freedoms. Across the twentieth century, this freedom of education has been grounded in the Dutch constitution and articulated in a simplified definition referring to a division of responsibilities. That is, government decides upon goals and attainment targets, but decisions about how to organise educational provisions to achieve these goals are at the schools’ discretion. This division of responsibility and governance has more than once caused difficulties across the history of Dutch education (cf., Bronneman-Helmets, 2011). In its role of guardian of educational quality sometimes imposing national converging regulations, government can easily be accused of violating freedom of organisation.

Thus, the Dutch concept of freedom of education causes tensions because *what* education should be for (i.e., goals, attainments targets) and *how* these goals are achieved (in terms of managerial and educational organisation) are always interrelated. Moreover, if education is funded with public money, then guarding the quality of education is also demanded by the public itself. As a consequence of these tensions, debates about education in the Netherlands inevitably become highly politicized. One of the most influential councils of government states that the fact that a public debate about the aim and contents of education, that is, what education should offer youth and society, is almost completely absent, could be seen as the downside of Dutch freedom of education (WRR, 2013).

As for vocational education, the impact of freedom of education is quite different for MBO than for HBO. In higher education, the core of quality control is a system of periodic quality control and accreditation organised by the sector itself. The Inspectorate is more distant and only in the case of real calamities does the control

become more intensive and prescriptive. Being part of higher education, HBO institutes (i.e., universities of applied sciences) have considerable freedom of organisation. Prescribing what constitutes courses, programmes and qualifications is left up to the universities' discretion. Indeed, no legal frame exists to establish qualification profiles for programmes (except for the relatively recent demand to prove that these new qualifications are needed at the labour market). If there are legal frames, these come from professional bodies or from the public sector (e.g., health care, welfare, education itself in relation to teachers, and so on). In the 2010s, the Inspectorate has intensified its guardian role because of criticisms about the validity of graduation. Furthermore, governments have imposed stricter rules about the quantity of teacher-student contact in the first year of the bachelor study. Both measures were taken in response to specific incidents that resulted in a public debate and concern about the quality of higher education, in particular of the professional bachelor studies.

As for MBO, the distinction in responsibilities and steering regarding what and how is consolidated in the WEB, in particular with the establishment of a national qualification structure for MBO. Despite the strict distinction in responsibilities for the what and how, MBO institutes still claim they experience restrictions in their freedom to organise education (De Bruijn & Howieson, 1995; Van der Meijden & Petit, 2014). A recurring issue is that schools claim that the qualification profiles in which knowledge, skill and attitudes are defined for vocational education programmes have a direct influence on the curricula and offer limited scope to tailor programmes to preferred educational concepts or models and also to local circumstances. Despite the less detailed qualification profiles in recent years, the complaints from the schools remain more or less the same. The underlying issue tends to be the struggle on who is to decide and define educational objectives, and how contradictory demands (e.g., national and regional; occupational, social and educational) are articulated and addressed. Sometimes it seems that this struggle about who decides is given more importance than what is actually decided about vocational education content.

Notwithstanding these critical remarks and underlying tensions, and despite the prescriptions of qualification profiles, there are examples of vocational programmes that match their education and teaching concept and local conditions (De Bruijn & Leeman, 2011; Huisman, De Bruijn, Baartman, Zitter, & Aalsma, 2010). To what extent the qualification profiles prescribe the organisation of education or to what extent teams might not be able to design curricula are yet to be thoroughly researched. Both options might be explained by the fact that the educational field experiences difficulties in designing curricula that take into account the different demands from companies as well as young people. In general, qualification profiles and attainment targets limit the possibilities of how to organise education to some degree, which becomes stronger possibilities if schools lack the educational expertise to design well-structured curriculum and align these with appropriate experiences.



Furthermore, the two educational pathways (full time and apprenticeship programmes) which are the legislated and prescribed tracks to realize defined qualifications, also constrain the freedom of organisation. From the 2010s, this strict division in the pathways is being eased, but because specific funding rules which are embedded in the way the systems of education and work coordinate vocational education are related to both pathways, this is not very easy to realize. For instance, full-time education has public funding if enough lessons are provided for students (1600 a year of which 1000 lessons at school) and for which student might receive a study loan. Apprentice programmes are funded by companies and government. Programmes consist of at least 850 h a year of which 200 are at school. Apprentices are employees who receive wages. This established coordination of the vocational education system shows how dominant the influence of these prescribed pathways is on the design of curricula.

Another, somewhat different aspect is the mandatory quantity of time for teacher-student contact as an aspect of educational quality controlled by the Inspectorate. This obligation as part of the role of government to guard the educational quality, also limits freedom of organisation, in particular because learning sites and assignments that are common in vocational education like workplace learning, authentic projects, online interaction and simulations are not automatically included in the definition the Inspectorate applies.

Increased constraints in guarding quality by government and controlling the performances of educational institutes over the last two decades are quite noteworthy. Although these increased constraints, enacted as quantitative and control measures, apply to all education types, for vocational education, MBO and HBO, it is rather new and methods and its definitions are not a good fit with the provision of vocational education because the educational logic prevails, for instance by not including workplace learning or learning in other contexts or ways in the standards of the (obliged) amount of lessons offered in educational programmes (Van de Venne, Honigh, & Van Genugten, 2016). The Educational Council (Onderwijsraad, 2015) proposes to implement other quality control mechanisms in which both qualitative and quantitative standards are used. These will become part of professional standards and work arrangements in educational institutes, teams and for teachers themselves, rather than being externally enforced by Inspectorate controls.

The constitutional concept of freedom of education, as described in this section, offers an additional perspective for understanding the governance and organisation of vocational education within a private-public frame as discussed in the previous section. The turbulent process of developing a qualification structure for MBO might be better understandable through this conception. The struggle between stakeholders on who is to decide was mingled with the debate on the distinction between what should be learned and how this is organised. Ultimately, as government has to decide about educational goals and provisions, but should constitutionally offer maximum freedom for schools in how to organise education, the educational logic can prevail in such circumstances. The limited influence from social partners at national level might be partly explained from this peculiarity of the Dutch education system.

### ***1.4.3 Accessibility and Qualifying for Occupational Practice***

A typical dilemma for vocational education in a public-private frame is to both support all students in their personal development and allocate them to the labour market through preparing and qualifying them for occupational practice. In theory, these two tasks need not be at odds. As occupational practice is dynamic and partly unpredictable and students' wishes and needs require to be addressed, it should be possible to design vocational programmes that are responsive to occupational practice whilst enhancing the development of students' potential (De Bruijn, 2006; Mertens, 2001; WRR, 2013).

Yet, when attempting to realize both tasks, frictions are common, in particular from the perspective of involved parties with distinct agendas like students, parents, employers, teachers or government. This tension can be noticed in several ways in Dutch vocational education. Tension between accessibility and qualification in MBO can be recognized in the legal obligation for vocational education colleges (ROCs) to offer each student of 16 years and above an appropriate programme that prepares and qualifies them for the labour market. As noted, MBO comprises vocational programmes at four qualification levels that are part of the national qualification structure. Ever since entry Level 1 qualifications were introduced as part of the WEB, there has been a debate about whether these programmes could and should have any civil effect (i.e., be recognized by employers). In fact, in the 1980s and 1990s the full-time courses at Level 2 were objects of the same debate because the apprenticeship system was preferred by employers for jobs at that level (e.g., De Bruijn, 1997).

Across the history of MBO, programmes for resilience, remedial teaching, social participation, equipping schools for drop outs and vulnerable youth, career choice and so on, are sometimes designed and enacted as separate programmes and sometimes integrated in qualifying programmes for the labour market. According to the WEB, such programmes should be related to initial occupational preparation and qualifications. The underlying rationale was that to do otherwise would mean these programmes would provide little additional value to their participants and they, in turn, would be less motivated. This rationale was based on research undertaken on these programmes that, in particular, focussed on impacts for participants in respect of dropout rates, civil effect, or educational career (e.g., Nieuwenhuis, 1991; De Jong & De Wild, 1989). Over the years, the civil effect of the Level 1 programmes of the WEB was judged to be problematic. Recently, government decided to change names: Level 1 programmes became entrance programmes (Ministerie van Onderwijs, Cultuur en Wetenschap [OCW], 2014b, 2015a). Thus these programmes, for as long as this new nomenclature exists, have a distinct status albeit with the aim to prepare for occupational qualifying programmes.

Another issue which reflects a tension between accessibility and qualification is the triple qualification objective of MBO. By law (WEB) MBO has to prepare and qualify students for the labour market, for further education and social participation. In the process of refining and enacting these programs and these tasks, their

divergence becomes evident. Qualifying for social participation is manifested in separate modules or courses for resilience and civic education but also for maths and Dutch language. Qualifying for further education is restricted to the transition from programmes at qualification Level 4 to HBO and concretized in particular modules that prepare for HBO. Addressing career development issues is most of the time perceived to be part of qualifying for social participation and is catered for more often in terms of stand-alone modules or workshops than as an integrated element of the curriculum. Seldom connections are made between qualifying for social participation, and qualifying for both further education and work. Integration is scarce, both in the qualification profiles and aims of programmes and the curricula. Therefore, qualifying for work is often perceived to be not only distinct from but even oppositional to civic education, career development and personal development. Accessibility in terms of catering for personal development apparently sometimes seems to be contrary to educating for the labour market and occupational practice (Van den Berg & De Bruijn, 2009). As Meijers, Lengelle, Winters, and Kuijpers (2016) describe, recently practice is changing and more examples of integrated curricula in this respect are developing.

The problems at the lower levels of MBO are: (i) the downward pressure on the middle segment of the labour market, (ii) the difficulties in integrating the triple qualification assignment for MBO and (iii) worries about the attractiveness of vocational education; all these issues together seem to be disastrous for the 1990s' objectives for integration of MBO in one comprehensive system. In 2015, it was proposed that the title MBO (vocational education at intermediate level) will only hold for MBO 4 programmes (OCW, 2015a; Van der Meer, 2015). Programmes at Levels 2 and 3 are to be renamed as intermediate craft education. Here it shows a remarkable pendulum in time. If this actual separation of different levels of MBO turns into reality in the near future, the resemblance with the situation before the WEB is striking. In the 1970s and 1980s, predecessors of MBO Level 4 programmes were offered by (rather high-status) MBO schools whereas separate regional schools and related temporarily provisions offered the predecessors of MBO programmes at Levels 2 and 3.

In HBO, the debate on the quality of HBO in relation to stricter admission requirements also reveals tensions between accessibility and qualification for the labour market. The focus in this debate is foremost on MBO students entering HBO. As already noted, dropout of MBO graduates in the first year(s) of HBO bachelor programmes is considerably higher than for students with other forms of education (Neuvel & Westerhuis, 2013). After all, MBO graduates are already prepared and qualified to apply for interesting labour market positions. The recently developed 2-year associate diploma programmes might better cater to the need for further training of many MBO graduates, in particular when combined with working. However, MBO graduates who *do* continue in HBO after the first 2 years succeed, but often experience difficulties with the more academic aspect of HBO, such as writing or acquisition of disciplinary knowledge.

The recent debate in HBO about a stricter set of admission requirements is part of a broader discussion about making demands beforehand in terms of its relation to

the occupational skills and knowledge required by occupational practice. If considerable numbers of students are unable to meet these requirements during and at the end of their study, then stricter admission requirements may become an option to solve this issue (of course accompanied by intensification of guidance and quality of the educational provision). However, this debate is also about requirements from the perspective of educational logic, like the academic quality of graduation projects, and not solely on demands from the perspective of labour logics, that is, the qualification requirements employers ask from graduates to become a new employee.

Finally, the tension between accessibility and qualifying for the labour market is reflected in the developments in the flow of students within the vocational education system, in particular within MBO itself. As Figs. 1.1 and 1.2 depict, the designated vocational education pathways comprise prevocational programmes in VMBO and subsequent programmes in MBO and HBO. Participation rates, as presented in Sect. 1.3, indicate that the preparatory stage of these vocational pathways gradually changes its nature from prevocational to general. Most young people participate in general education up to the age of 16. The inflow in MBO, particularly full-time programmes at qualification Level 4, therefore changes as well: most students have a background in (lower) general education. It seems that graduates from prevocational programmes have more difficulties in commencing Level 4, even though they meet the admission requirements.

With respect to apprenticeship programmes, it is noted that employers often prefer that students start at MBO Level 2, and work their way up regardless of their educational background in lower secondary education. Key in the student flow through MBO is the transition from programmes at Level 2 to programmes at Levels 3 or 4. If a barrier exists here then there is no vocational education route from lower level to higher education (i.e., there is no real vocational education pathway). As the figures presented in Sect. 1.3 indicate, the student flows within MBO show there are indeed obstacles in the pathway from programmes at Level 2 to Level 3 or 4 and further to HBO. Allocating opportunity in the labour market seems to conflict with accessibility of the system.

Apart from the watershed within MBO comprising the two educational pathways (apprenticeship or full time) and qualification Level (2 versus 3 and 4), national policies also play a role. In the 1990s, government tried to hinder the accumulation of diplomas at subsequent levels of qualifications as much as possible, with the premise that students ought to start their educational career at the qualification level they were able to. This accumulation was perceived to be inefficient (Bronneman-Helmers, 2011; De Bruijn, 1997). In the early 2000s, national vocational education policies turned in favour of piling up diplomas. In line with EU policies (European Commission, 2012), a taskforce and projects were established to stimulate student flow through the vocational education system to elevate the level of qualification population. The underlying argument was that the design of the education system, with no dead ends, offered the possibility of transitions up to higher education and could thus ameliorate for undesirable effects of the early selection at age 12. However, since 2010 national policies changed, partly because of the economic recession leading to financial cut backs. Cautious but systematic (e.g., by

differentiating in financing of student participation in programmes) government aims at regulation of student flows, focussed on identifying pathways that are not too lengthy.

Over the years, notwithstanding continuous changing policies, participation patterns show that young people on various grounds adopt other routes through the system than that which the system design intended (De Bruijn, 2006; Neutel & Westerhuis, 2013). Detours, piling up diplomas, or taking leave will always be part of educational careers, either before starting work or during a work career. However, young people who proceed with their further educational career at age 16 with a programme at MBO qualification Level 2 will encounter more difficulties on their way through the system than those who proceed at age 16 with a programme at MBO qualification Level 4 right away.

To understand the development and impact of these policies in the Netherlands, it is helpful to identify how nearby countries, Germany and Denmark, cope with issues of accessibility, preparation and qualifications for the labour market. Germany and Denmark resemble the Netherlands in many respects, but have made different choices about educational pathways and, therefore, show different developments (cf., Westerhuis & De Bruijn, 2015).

In Germany, access to the dual system of vocational education has been de-linked from previous education. Many participants are from high-status general education programmes. Graduates from lower level programmes that are more or less comparable with Dutch VMBO are excluded because the dual system is labour market related and has a restricted number of placements. This selective entrance is a result of the perceived high status of the dual system by German employers, students and parents (Westerhuis & De Bruijn, 2015). This perceived high status, in turn, makes alternative pathways at the lower end of the labour market almost impossible. In Germany, therefore, there is only one key route to qualified entrance of the labour market. Other pathways exist, but are less relevant in terms of their allocation to the labour market, that is, to finding a job. From a Dutch perspective, we might question what would be the effect of a more selective labour market on the employment prospects of MBO Level 2/3 graduates. The risk exists that these vocational programmes will be perceived by employers, students and their parents as second-class provision. The development towards separate vocational schools for vocational programmes at qualification Levels 2 and 3, the fact that Dutch apprentices have fewer opportunities for transitions, and the development that there is less need for intermediate qualified personnel, seem to indicate that these risks are potentially serious and could become reality in the near future.

Denmark offers a completely different picture. There are no prescriptive pathways in the education system. Lower secondary education has no differentiation in programmes or schools. After completing this lower phase, when they are 16 years old, students are allowed to stay another year if they are undecided about how to proceed with their educational careers. Furthermore, entering the Danish vocational education system at intermediate level, their programme commences with a half-year orientation at school before deciding which programme suits them best. After that first half year, young people are allowed to choose between numerous programmes.

These programmes all comprise considerable time learning in workplaces but show much variation in their scope (i.e., more broad or specific) and in duration (i.e., lasting between 1 and 5 years). This variation might be difficult to comprehend for the outsider, but young people can be certain that programmes will cater for the development of their potential and (future) ambitions. Cooperation with workplaces is firmly embedded in this dual system to assure that young people's selected pathways are aligned to labour market developments.

From a Dutch perspective, the Danish developments imply that the differentiation of qualification levels in MBO would disappear. The length of programmes in MBO would vary then even up to 7 years and flexible opportunities to transfer would replace the accumulation of diplomas. Flexible opportunities for transfer could become more effective as students are not obliged to complete whole programmes before transferring to another (using a metaphor: to travel from A to C could be without going to B first and will be quicker).

#### ***1.4.4 Educating for the Present and for the Future***

A pressing issue of vocational education is how occupationally specific its programmes should be. Acknowledging potential tensions between the education and labour system, the simple answer would be that basically no optimum exists. However, in reality, when defining vocational qualifications and designing curricula, the relation with features and developments in occupational practice is an important and, possibly, necessary standard to which its efforts should be directed. Dutch legislation requires an investigation of the labour market needs for vocational programmes, the so-called macro-functionality test (cf., Van Lieshout & Scholing, 2009; Vink, Oosterling, Vermeulen, Eimers, & Kennis, 2010). There is a governmental need to control the implementation of new vocational education programmes in relation to labour market functionality to be accountable for and prudent with the use of public funds. Moreover, economic parties and vocational institutes themselves have a need to be able to ground the relevance of the programmes they offer in either community need or economic imperatives.

All parties making up the vocational education system will aim to regulate frictions between education and labour market imperatives. This is despite the fact that, at the same time, all parties are aware of the unpredictability of economic and societal developments that make any predictions about employability problematic. The various global crises of the last 20 years made it again absolutely clear that it is difficult to make confident predictions of the demand for particular occupations in the labour market. In addition, there is the inevitable problem of the lapse of time between changes in vocational programmes and when the first students graduate from these new programmes. Intermediary practices in vocational education, such as placements, training departments in companies, small enterprises in school, and cooperation between parties in organising vocational education taking shared



responsibility, stand to ease the frictions between the education and labour imperatives.

Intermediary links can work to diminish the urgency of answering the question of for what precisely, at a specific moment, vocational education should qualify. Big companies sometimes prefer broadly defined competence to be realized through vocational education. These companies then organise specialization and further professionalization in-company (e.g., Van der Meijden & Van der Meer, 2014). Small- and medium-sized enterprises (SME), however, prefer graduates who are immediately deployable when they start working. Cooperation within industry sectors in respect to training and professionalization and apprenticeship provisions could smooth this demand of SME (Van der Meijden & Van der Meer, 2014).

From the perspective of educational policy, the fundamental question of the added value of vocational education remains. For MBO, the answer basically is to realize the triple qualification target: qualifying for work, further education and social participation (Westerhuis et al., 2015). For initial vocational education (MBO and HBO), the shared opinion on the added value with respect to qualifying for work is to provide a firm foundation for future working careers of graduates, including the competence for lifelong learning. Although opinions differ on other targets that should be realized, this common goal is reflected in the emphasis on educating for key qualifications in the 1980s, broad professional competence around 2000 and a recent focus on so-called twenty-first century skills (cf., Christoffels & Baay, 2016; Nijhof & Streumer, 1998). These titles and underlying concepts underline the importance of a generic, though occupationally oriented, content of vocational programmes whereby generic implies basic skills and understanding which can be further expanded and specified during working careers.

Although previous paragraphs refer to general developments, it is important to be aware of the variety in vocational education. We have referred to differences between companies already; other variation exists also. Whereas a more broad focus is present in vocational programmes at higher qualification levels, we see it less in vocational programmes at lower qualification levels, where there is a tendency to prepare students as specifically as possible for occupational practice. At the same time, we see variation in focus, depending on the nature of educational pathways. In dual programmes with a very large component of workplace learning, content might be more specific than in programmes with less learning at the workplace. Variation also exists between occupational domains depending on culture, traditions and the nature of vocations. Furthermore, there is differentiation between learning objectives, which can lay emphasis on either knowledge or skill or on a combination of generic and specific elements, like work process knowledge. Finally, variation relates to, among others, economic climate, technological change, societal needs and changes in ways of working and who works. In a more negative economic climate, companies focus more on primary business (e.g., Doets, Van Esch, & Westerhuis, 2008; Nijhof & Van Esch, 2004). The plea for graduates who do not need too much training any more is much louder than in times when there is a favourable economic climate. When the economic climate is more negative, qualifying for the labour market is perceived to be a public task, whereas in economic

boom periods employers prefer to turn new workers into effective employees through in-company training.

When defining aims and curricula of vocational education, since it is part of the public education system, the issue of specificity and topicality is always present. It is about the distinction between educating for existing occupational practice and that of the future; it is also about the definition of vocational skill or competence (cf., Onstenk, 1997, 2001; Turkenburg, Van den Bulk, & Vogels, 2014). Occupational competence (i.e., in a narrow definition of competence) seems to be the opposite of also narrow definitions of general skill, competence, “Bildung”, citizenship, personal development and normativity. As we described earlier in this chapter, these narrow definitions are reflected in vocational curricula that are concretized in numerous separate modules addressing the various policy-related definitions of the triple qualification objective of MBO. In HBO, similar eclectic curricula exist. Specificity and generality remain conflicting concepts reflected in a fragmented curriculum.

The starting point in a broad definition of vocational competence is that specificity and generality relate to each other (reflected in the statement that the best specialist is a generalist and vice versa). In the broad definition of vocational competence the instrumental dimension (what do I have to know and how to perform?) is inseparably related to the normative one (who and how do I want to be?). In the German language, the term “Berufsbildung” refers to this level and kind of commitment to paid occupations. In English, “vocation” refers to the personal significance of one’s job whereas “occupation” refers to it as a sociological category. Vocational education is, therefore, education that qualifies students for a social practice and at the same time supports students to develop personal meaning and sense (Billett, 2011; Colley, James, Tedder, & Diment, 2003).

Despite good practices, teams and institutes within Dutch vocational education experience difficulties designing integrated vocational curricula from the perspective of a broad definition of vocational competence. Many curricula reflect a conflict of meaning of how to understand vocational competence. The qualification profiles (MBO) and defined programme qualifications (HBO) as well as many vocational curricula in MBO and HBO are rather fragmented in this respect (e.g., De Bruijn & Bakker, 2016; Wesselink & Zitter, 2016).

### ***1.4.5 Vocational Education and Its Contribution to Lifelong Learning<sup>2</sup>***

Dutch vocational education – MBO and HBO – as part of the public education system mainly provides initial vocational education. Although adults are an important target group for the dual and part-time vocational programmes in MBO and HBO,

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<sup>2</sup>Onstenk (2016a) discusses the issue of lifelong learning and the relation with the provision of vocational education in more detail.



these programmes are lengthy and costly. Even more importantly, most of these programmes can be characterized as alternative or compensating tracks to obtain the same qualification as young people do in initial, mostly full-time programmes. Thus, these dual and part-time programmes in MBO and HBO are not tailored to the educational needs of (adult) workers in practice (Committee for flexible higher education for employees, 2014; OECD, 2014b).

Due to various reasons such as technological developments, dynamics of the labour market, globalization and later retirement, there is a need for further training of workers in all age groups. An appeal has been made also to publicly funded vocational education institutes (i.e., MBO and HBO) to contribute to addressing this need (cf. OECD, 2014b). There is a need for substantial vocational training, in particular, for intermediate qualified employees as a response to the growing demand for higher educated employees in combination with the predicted decreasing demand for intermediate qualified employees (Van den Berge & Ter Weel, 2015). Training courses offered by private suppliers often are perceived to be too specific, focused on single instrumental skills, and the regular provision of MBO and HBO is said to be too inflexible to meet these needs (OECD, 2014b). As noted, the 2-year associate diploma programmes that were developed over the last decade seem to be better at fulfilling these training needs. Except for the associate diploma programmes, MBO and HBO institutions are asked to provide a variable spectrum of programmes of less extensive, but still substantial, post-initial education (Fazekas & Litjens, 2014). These courses should go beyond instrumental training of skills, should also focus on understanding, and should offer flexible, tailor-made education in which learning experiences at the workplace are addressed and expanded and online guidance is provided, because this is how workers sustain their employability demand level (cf., Committee for flexible higher education for employees, 2014). Such programmes should preferably deliver certificates which participants could collect in a portfolio to prove that they obtained a higher qualification level.

National policy supports the initiatives for the provision of training and education programmes for adults and to make certification of their learning possible (OCW, 2014a, 2015b). Recent trials with individual study credits, extending legislation, certification of modules of regular MBO and HBO programmes and implementation of more associate diploma programmes are all incentives being enacted to stimulate employees' participation in training and education. Concurrently, publicly funded vocational education is being pressed by government to enact such provisions. In the 1980s and 1990s, there were analogous initiatives such as modularization of vocational programmes to increase responsiveness to occupational practice and offering training possibilities for employees (De Bruijn & Howieson, 1995). Furthermore, regulations and practices for assessing and certifying existing competencies (i.e., recognition of prior learning) were aligned to these initiatives. These initiatives are enjoying renewed momentum. Whereas in other countries similar initiatives were enacted in the previous century, in the Netherlands developments in publicly funded vocational education on modularization, certification and recognizing prior competence and its contribution to training for adult workers stagnated at the end of the late 1990s (Doets et al., 2008). For the coming years, new

initiatives and practices associated with these goals are likely to become increasingly necessary.

Special attention is likely needed for low-qualified workers and the ones just one step above them as these are the most vulnerable. As it stands, low-qualified employees appear to participate less in training than high-qualified employees (Borghans, Fouarge, De Grip, & Van Thor, 2014). Yet as already mentioned, at the same time, employment prospects at the lower end of the labour market are not good (De Graaf-Zijl et al., 2015). As the nature of jobs and payments deteriorates, probably intermediate qualified workers will take up positions of low-qualified work as worthwhile forms of employment are becoming increasingly scarce in the intermediate part of labour market. An important assignment here is for MBO to provide as many young graduates as possible with a qualification at Level 2 (i.e., the starting qualification for entering the labour market) to address this need. As noted, drop outs have decreased in the last two decades with fewer low-qualified people (lower than MBO Level 2). For those remaining in these roles, further training will be equally important as they will also have to remain current with labour market changes up to their late sixties as working life becomes longer. Providing appropriate and timely vocational education provisions is a preeminent task of publicly funded MBOs.

MBO Level 2 qualified workers are categorized as intermediate, but they actually have fewer options. Following future developments as predicted in current analyses (De Graaf-Zijl et al., 2015; Van den Berge & Ter Weel, 2015), in particular, will cause MBO 2 qualified workers the most difficulties. They will have less opportunity to proceed to higher qualified outcomes and work and, therefore, will likely fall to the lower end of the labour market and themselves displace lower skilled workers there. However, all of the previously mentioned initiatives with respect to training and education focus on the higher qualified within the intermediate qualified group. National policy on flexible vocational education does also address programmes at Level 2 and 3 (OCW, 2014a) but actual processes for progressing are less consistent. For example, the pathways from MBO 2 to subsequent levels of MBO are inflexible and, therefore, do not effectively address needs of workers' learning. In addition, this pathway is hindered by government because piling up diplomas in MBO is discouraged by financing rules as discussed in Sect. 1.4.3. If students are engaged in lengthy tracks they count less for public financing. In addition to the limited attention of and inconsistencies in national policies with respect to the contribution of public funded vocational education to the training needs of this group of workers, more detailed analyses of labour market dynamics in this segment are also missing. Hence, the kinds of effective guidance required are absent.

## 1.5 Understanding Dutch Vocational Education in Practice

In the previous sections we presented five issues that are helpful to understand Dutch vocational education in practice. Beyond the principles of the design of the Dutch education system and the positioning of vocational education within it, the

elaboration of these issues illuminate how the system is enacted. The particulars of the private-public frame assist in illustrating the processes by which Dutch vocational education is shaped, the resulting programmes, and the articulation of cooperation between schools and enterprises. The freedom of education issue, which is in some way or another present in all educational debates and policies, offers an additional perspective and adds a further element. The described tensions between accessibility and allocation to the labour market and between educating for the short term and the future are perennial issues for any vocational education system, but play out in country-specific ways.

The final issue is the contribution of Dutch vocational education as part of the public education system to lifelong learning, which foreshadows a challenge for the future of the system and tests its responsiveness to emerging national challenges. It calls for more responsiveness by the various actors in the system. Participation patterns show there are groups that experience difficulties in their careers through the system. Yet, schools are sometimes not alert to these difficulties, programmes and pathways are not flexible enough, and the coherence of the provision of intermediate vocational education is, subsequently, at stake. Concurrently, developments in the labour market and occupational practice cause pressure precisely on jobs at intermediate level. Dutch vocational education, therefore, needs to transform further into a transparent and responsive provision for educating for occupational practice for various groups before, during, and across working life. The chapters in the rest of this book show how Dutch vocational education copes with this complex and challenging education project.

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**Part II**  
**Policies and Organisations**



# Chapter 2

## Vocational and Professional Education and Lifelong Learning

Jeroen Onstenk and Ruud Duvekot

### 2.1 Introduction

Training for adults remains relevant in a demand-driven and rapidly changing knowledge economy. The so-called Lisbon objectives (EC, 2010), to which the Netherlands is committed, stresses the importance of raising the qualification level of the working population, on account of both competitiveness and entrepreneurship as well as for active citizenship. However, the relationship between vocational education, adult education and lifelong learning in the Netherlands is complex. In fact, the main contribution of MBO (secondary vocational education and training) and HBO (Higher Professional Education) is mostly seen as preparing students for lifelong learning (LLL). Although this is mentioned as a motive for competence-based education and enlarging the extent of work-based learning, as well as for many didactical innovations in vocational education (Onderwijsraad, 2012; Onstenk, 2004; SER, 2012), actual effectiveness of MBO and HBO in preparing for LLL is unexamined and often doubted (Nijhof & Nieuwenhuis, 2008). Still, there is much attention in research and policies given to promoting LLL. A distinction can be made between learning in organised settings (adult education) and (informal) learning in all kinds of life contexts, including the workplace. While traditionally the emphasis was on adult education, nowadays there is growing awareness of the importance of LLL in the workplace (Borghans, Fouarge, de Grip, & van Thor, 2014; SER, 2012).

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This chapter argues that the role of Dutch vocational and professional education (MBO, HBO) in LLL is limited. Although there have been many policy papers and several interesting projects, on the systemic level, the past 20 years in the Netherlands has seen a stagnation in developments in public-funded adult vocational and professional education. This stagnation covers certification and recognition of prior competence, making courses more flexible, and contributing to training for adult workers. In this chapter, we examine the contradictory relationship between MBO, HBO and LLL across three topics: (1) Background of the Netherlands as a lifelong learning society; (2) Adult Education and the MBO system and (3) Accreditation of prior learning.

## 2.2 The Netherlands: A Lifelong Learning Society?

A number of arguments can be advanced about the importance of lifelong learning in the Netherlands (Cedefop, 2002; SER, 2012). Technological developments, dynamics of labour markets, globalization as well as later retirement, all reinforce the need for further training for workers in all age groups. Consequently, an appeal for greater contributions has been made to all publicly-funded vocational and professional education institutes (CFHOW, 2012; OECD, 2007, 2014; SER, 2012; Van der Meer & Smulders, 2014). The demographic factors at play here include a declining number of young people and a growing number of the elderly, who have to work (and remain employed) in a labour market where rapid increases in knowledge and technological innovations have led to a demand for continuous updating and improving of knowledge and skills. This need is prompted by the growing importance of knowledge in the Dutch economy, accompanied by high levels of economic growth, with comparatively low unemployment. All these trends have led to a shortage of well-qualified employees and a lack of basic qualifications among both the employed as well as job-seekers. Furthermore, there is also significant structural as well as cyclic non-participation by specific groups in the labour market. These traditionally comprised women, but nowadays they mainly include low-qualified youth and immigrant groups. At the same time, government policies aim for older workers to remain longer in employment, in an economy where the ‘job for life’ is vanishing rapidly. In the long corporatist tradition of Dutch labour policies, a ‘grand strategic coalition’ among the government, employers, and trade unions has emerged. This coalition is what drives policies towards LLL, based on a consensus in the policy discourse about ‘employability’ as a core justification for LLL, as opposed to empowerment and emancipation-oriented overtones that characterized adult education policies until the eighties (Duvekot & Brouwer, 2004; Duvekot, 2016; UNESCO, 1996, 2009).

OECD (2000) argued that the development of a ‘knowledge and participation economy’ calls for the continuous development of human capital, recognition of the changing demographic structure of the population, and efforts to promote the inclusion of social groups traditionally excluded from the labour market. In terms of

preconditions for a system of LLL, the OECD report referred to the need to (a) create more time for training in the workplace, (b) establish greater clarity for both employers and employees on the benefits of education and training, (c) reduce the high costs of continuing vocational training, and (d) the need for a transparent and differentiated supply of education and training by both public and private organisations. These themes have remained important – yet partly unresolved – policy objectives in the Netherlands (SER, 2012). In 2003 the Dutch Education Council (Onderwijsraad, 2003) identified four important functions of continuing education and training:

- training to ‘repair’ truncated initial school trajectories (e.g., dropout, underachievement)
- training connected to a career change (accomplished or planned)
- training to maintain knowledge and skills (in the same evolving job or vocation)
- training with the aim of socio-cultural and personal development.

The council signalled that a systematic range of quality and recognised training programmes to fulfil these necessary functions was missing and called for further coordination.

According to Duvekot (2014, 2016) there is an important difference in the definitions of formal, informal and non-formal learning between the Netherlands and the EU. This difference is related to the Dutch learning culture in which a strong focus on nationally accredited diplomas or certificates has traditionally had a dominance over the learning that takes place in sectors or organisations (Onderwijsraad, 2012; SER, 2012). This focus is a result of the so-called ‘polder-model’ which involves a constant process of negotiation to harmonise the interests of authorities, employers and trade unions. This model has led and leads to ‘political bargaining’ on social and economic issues in which the role of providing education is divided between a responsibility for initial education (by the government) and post-initial education (by ‘the market’) (Duvekot, 2014).

The economic motive, summarized as keeping up employability in a knowledge economy, was a central theme in the activities promoted between 2005 and 2010 by an interdepartmental Project Directorate Learning and Working, which focused on the promotion of LLL in companies. The purpose was to stimulate regional networks and institutions on the demand side, like companies and employment offices, and regional suppliers like MBO colleges, to establish more sustainable relations as well as to develop effective procedures covering the whole cooperation and course delivering process. The strategy of the task force was to raise the demand for LLL and in this way to subsequently force the supply side to respond. It emphasized the diversity in learning cultures between large and small companies and between different sectors with regard to amount and quality of (re)training accessible for workers. The directorate advocated including training agreements in employment contracts, and further development of tools (such as training vouchers) to promote training (Learning and Working, 2009). It advised introducing mandatory work learning contracts, funding individual training budgets and obliging welfare recipients to go to school.

LLL in one's career takes place in a whole range of combinations and varieties of formal and informal learning. After completing an initial (vocational) education one continues to learn further in informal work-based learning through experience and reflection. At some point, they may be confronted with a need or opportunity to participate in formal training again. This participation, in turn, can promote further learning and new opportunities for informal learning, either by opening up new job opportunities offering new learning affordances, or by reviving the willingness or ability to learn (agency). In the Netherlands, yearly participation in organised adult education amounts to more than 15% of the working population. This percentage, though above the European target, lags behind the national ambition of 20%. Furthermore, in recent years, the growth in this figure has come to a standstill (Nieuwenhuis, Gelderblom, Gielen & Collewet, 2011). In fact, adult participation in training and education in terms of time spent even diminished (WRR, 2013). Informal learning plays a crucial role in the learning process of the workforce. Borghans et al. (2014) state that approximately 93% of the time that workers spend on educational activities relates to informal learning in the workplace. This estimation, like most Dutch research on this topic, is based on self-evaluation by employees. Informal learning is defined and measured by Borghans et al. with the question what percentage of working time is spent on tasks where one can learn something. In recent years, this percentage dropped slightly from about 31% in 2004 to about 28% in 2010. 28% means that an average employee spent around 380 h in a year on tasks involving learning. Out of these, 30 h per year were spent in courses. In other words, the self-estimated learning time for an average worker consisted for more than 90%, of informal learning and less than 10% of attending a course or training. While formal training participation remained virtually the same between 2004 and 2010, the percentage of working hours spent on learning tasks decreased slightly over the same period.

There is some Dutch research on *how* informal learning takes places and how more optimal learning circumstances can be created. Most of this research consists of case studies in specific companies or sectors. While there is some theorizing on adult learning in the workplace (Bolhuis, 2009; Nieuwenhuis & Nijhof, 2011; Onstenk, 1997; Poell, 1998), there is little generic research on the workplace curriculum (Billett, 2006) or on the *processes* of informal learning (Eraut, 2004) in Dutch industry and even less on MBO and HBO courses for adults. In light of the demands with regard to LLL, already acknowledged for over more than a decade (CEDEFOP, 2002; OECD, 2000), it is a discomfoting conclusion that the organisation of the system of post-initial vocational training as a contribution to LLL in the Netherlands is still far from optimal.

### 2.3 Adult Education in the Vocational Education System

To what extent are LLL strategies being implemented in vocational education and training in the Netherlands? Adult education can be seen as a separate part of the system of vocational qualifications and development. Adult education in the

Netherlands is partly regulated by the same law (WEB) as vocational education. However, most of the training in organisations (both in company and in training settings) is delivered by commercial training institutions, offering a whole array of shorter and longer courses on many topics – from highly specialized technical skills to generic social and communication skills – with very different ranges of application and labour market value. Secondary vocational or higher professional educational institutions only play a very limited role in company training. This can partly be explained by the very existence of an elaborate initial formal vocational education system. In many other countries, LLL is considered more important for raising qualification levels, because there is little vocational training in initial education (OECD, 2012). However, this limited role can also be explained by the lack of structural MBO trajectories for adults (so called ‘second chance’ trajectories for drop-outs or low qualified people), contrary to a country like Denmark for instance (Nieuwenhuis et al., 2011).

The concept of LLL in Dutch government policies has primarily focused on accessibility of (initial) vocational and professional education, and much less on the development of an integrated system of LLL or on sustainable concepts for a rearrangement of the balance between initial and post-initial education, although there have been several half-hearted attempts on the latter front. The government takes primary responsibility for providing a good basis for LLL in initial education. Individuals and companies are subsequently considered as the ones responsible for recognising the importance of LLL and maintaining competences (Onderwijsraad, 2012). From this perspective, the government identifies two roles: (a) guaranteeing a high quality and transparent range of initial vocational qualifications, which can form a basis for LLL and (b) creating conditions that facilitate LLL, like tax deductibility of study costs for individuals and training costs for companies. However, the Dutch government sees no role for itself in arranging a structural system of second chance MBO education (Nieuwenhuis et al., 2011), which offers the possibility of (re)entering a MBO institution in, say, your mid-twenties. As a result, it is not that surprising that private suppliers outperform public-funded institutes for MBO and HBO, as the OECD concludes in an international comparative study on ‘skills beyond school’ (Fazekas & Litjens, 2014). Regional MBO colleges (ROCs) had a modest 8% share of the private market for LLL in 2010 (Buisman & Van Wijk, 2011).

### **2.3.1 Policies**

In the last 15 years, recognition of the importance and amount of formal and informal training and learning in companies has grown (Borghans et al., 2014), with some fluctuation because of the economic crisis in the most recent years. From the mid-1980s onwards, high levels of unemployment and cuts in public expenditure led the government to redirect adult education policy towards its economic functions, with an emphasis on adult vocational education and training (Duvekot & Brouwer, 2004). It was thought necessary to reduce the high levels of unemployment,

especially among young people and the structurally unemployed, and to raise levels of active participation in the labour market. Education and training were increasingly seen as instruments for the acquisition of ‘starting qualifications’ in order to secure (re-)entry into the labour market. Publicly-financed provision of adult education was extended from the ‘second chance’ provision of general education for educationally disadvantaged groups to include adult vocational education and training for (re)integration in the labour market. This gave rise to a fragmented system of publicly-financed adult education and a large private training sector, which failed to address the training needs of the unemployed and low-skilled workers (Cedefop, 2002), and a lack of attention towards arranging LLL entitlements.

From the early 1990s onwards, government policy started to address such issues, including in particular, the integration of the system of public provision following the Adult Education Framework Act in 1991. This law introduced a national system of adult basic education and adult general education under the law on secondary education. Still greater changes followed the 1996 Adult Education and Vocational Training Act (WEB). Interestingly, in designing the WEB an explicit choice was made to combine vocational education and adult education in one law, rather than for example integrate vocational education in the vocational column (VMBO-MBO-HBO). The WEB established the integration of secondary vocational education (MBO), together with adult basic education and adult general education in the BVE-sector for vocational (B) and adult education (VE). This constituted a major reorganisation of adult and vocational education and training sectors based upon new regional vocational education colleges (ROCs). In this way, vocational colleges did get distinct adult education departments and objectives. However, these departments never got off the ground properly as an adult segment of MBO, except in apprenticeships (BBL) as a post-initial route for workers (adults now being the majority of apprentices). The adult education segment, consisting of adult general education courses and other second chance opportunities (‘Mother-MAVO’) and alphabetisation and second language courses, soon came to be dominated by citizenship programmes for ethnic immigrants (*inburgering*), which in a second step were transferred to local (and overseas!) market providers, rather than to the vocational colleges (Van Maanen, Van Gestel, & Visscher, 2009).

The WEB granted significant autonomy to ROCs with regard to institutional policies, but they were also expected to establish intensive contacts with relevant stakeholders – especially municipalities, the social partners, and local employers – in their regions. In the high economic activity of the late 1990s with steadily declining levels of unemployment, emphasis on the labour-market function of adult education and vocational training was strengthened further. The transformation of the Netherlands into a more knowledge-intensive economy contributed to an emphasis on maintaining the employability of the workforce through continuous updating of knowledge and skills. Successive policy papers and statements by interest groups increasingly emphasised the need to enhance the competitiveness of the Dutch economy, its transformation into a knowledge economy, and the need for a well-educated workforce responsible for and able to manage its own employability. It is in this policy context that LLL has become an important political priority and the

case for LLL possesses, above all, a labour-market rationale geared towards the enhancement of employability.

Learning may take place anywhere and can take different forms and formats. But learning processes – formal or informal – are not always efficient, effective or conscious. The challenge therefore is to develop systems, models and learning arrangements in which MBO and Human Resources Development (HRD) are seen as parts of a common frame for lifelong education and learning (Nieuwenhuis & Nijhof, 2011).

Further, an alignment has to be found between support for LLL opportunities in working organisations and the multiple levels of work-related learning. Using only a traditional educational approach is not enough. One important distinction between LLL and vocational education is the one of learning *as a practitioner* and learning *to become a member of a vocational community*. A balance is also needed between two models of the ‘architecture’ of learning: one serial-driven, by explicit learning objectives; and the other parallel-driven, by work and operational processes (Nieuwenhuis & Van Woerkom, 2007). This is a challenge for the regional MBO colleges (ROCs), which are good at serial learning but largely unexperienced with parallel learning. Local industry might cooperate with ROCs in both their public and private capacity. The Regional Colleges offer facilities to help older workers qualify either in ‘public’ programmes, or in privately-funded in-company training programmes.

To sum up, although in many respects MBO and HRD in companies are seen as part of a common developmental approach, where employees should be supported in developing their employability as expressed in the WEB, in reality there are still limitations to this. MBO courses are modelled in school and qualification terms, while companies prefer their own planning or tailor-made content and modes of delivery.

### 2.3.2 *Apprenticeship: An Adult Trajectory*

Regional MBO colleges *do* attract a growing number of adults to their regular MBO courses. The number of adult learners (over 27-year-olds) have risen from 50,000 in 2005–2006 to almost 70,000 in 2011–2012, i.e., a 30% rise (Fleur & Van der Meer, 2012). Most of these adult learners follow the apprenticeship (BBL) route; adults above the age of 23 now constitute more than half of all apprentices. In recent years, the number of BBL participants who were 23 years or older increased by more than a third, while the number of younger participants declined. The motivation of adult apprentices is in part personal, namely, aiming for a better job and career possibilities. In many cases however, they enter an apprenticeship course as part of a company, sectoral (process industry, construction, caring) or governmental programme to enhance their qualification levels.

The already mentioned Interdepartmental project Learning and Working (2009) promoted regional partnerships with budgets corresponding to the numbers of adults



they *promised* to train on an annual basis. These activities resulted in 150,000 learning-working trajectories, for a small part in regular or adapted BBL courses (Golsteyn, 2012). The regional partnerships formula proved to be some kind of shock therapy, for many regional MBO colleges were faced with demands they were unable to fulfil, given the standard operating procedures they are accustomed to (and forced into by regulations for initial vocational education). MBO courses are modelled in school terms, while companies prefer their own planning, tailor-made content and modes of delivery (Nelen et al. 2010). Regional MBO colleges find it very hard to change conditions for learning in the context of school-industry cooperation (Delies, 2009). Many MBO Colleges were not ready and able to participate effectively in regional school-industry networks as promoted by the Learning and Working project (Buisman & Van Wijk, 2011). Another reason for this are the rather limited possibilities to adapt formal qualifications, although there are probably more possibilities available here than regional MBO colleges actually use, especially with regard to trajectories for the ‘bottom’ members (unemployed as well as low-qualified workers) of the labour market.

In the Netherlands, there is a need for substantial vocational training in particular for intermediate-qualified employees (i.e., MBO Level 3 and 4). This necessity stems in response to the growing demand for higher-educated employees in combination with a predicted decreasing demand for intermediate-qualified employees. Although adults are an important target group of the dual- and part-time vocational programmes in secondary MBO and higher professional education (HBO), these programmes are rather lengthy and costly. Most of these programmes can be characterized as alternative or compensating tracks to obtain an ‘initial’ qualification. These dual- and part-time programmes in MBO and HBO are rarely tailored to the professionalization needs of (adult) workers in practice (Nelen et al. 2010).

Still, as training courses offered by private suppliers are often perceived to be too specific, with their focus on a single instrumental skill, there remains a need to make regular provision of MBO and HBO more flexible. The new 2 year AD-programmes developed in the first decade of the twenty-first century aim for better fulfilling training needs. MBO- and HBO-institutions are asked to provide a spectrum of programmes (of approximately 30 EC) with less extensive but still substantial post-initial education (Fazekas & Litjens, 2014). These courses should go beyond instrumental training of skills, and also focus on understanding, and offer flexible, tailor-made education in which learning experiences at the workplace are addressed and expanded and online guidance is provided. Such programmes should preferably deliver certificates which participants can collect in a portfolio to prove that they obtained a higher education (CFHOW 2012). A further suggestion to enhance the quality of workplace learning is to connect learning to strategic cooperative relationships with employers, for example, around Centres of Expertise (see Chap. 3). Broadened cooperation should take place to connect research and innovation with education and training of workers. This requires a reinforcement of apprenticeships as an innovative form of education.

### 2.3.3 *Contract Activities*

Apart from delivering qualifications, regional MBO colleges and (to a lesser degree) HBO institutions are involved in LLL by offering contract courses. Local industry might cooperate with regional MBO colleges on this front in both their public and private capacity. Regional MBO colleges offer facilities to expand the qualifications of older workers either in 'public' programmes, or in privately-funded in-company training programmes. According to the most recent research outcomes, MBO schools had a modest 8% share of the private market for LLL in 2010 (Buisman & Van Wijk, 2011). According to Buisman and Van Wijk (2011), this share can be larger if the colleges capitalize more on their networks and client relations and really 'go for it'. MBO schools offer contract courses, but these are only limited in number and mostly do not lead to a recognized qualification. As already mentioned, this has to do with the lack of organisational ability and flexibility of regional MBO colleges, as well as with rather limited possibilities to adapt formal qualifications. Some examples of enterprising colleges show that there are probably more opportunities than many colleges actually use. The culture of MBO institutions in general is not very enterprising (Honingsh & Thomsen, 2011). Contract activities remain a separate issue. This shortcoming of regional MBO colleges is especially pronounced in the case of trajectories situated at the 'bottom' of the labour market; MBO colleges could have done a better job delivering a starting qualification or upgrading the qualification of workers or the unemployed from this strata.

The role of MBO and HBO institutions has remained very limited. Enrolment in part-time programmes in MBO and HBO in fact decreased, while the total participation numbers in formal types of training and education during the period 2004–2013 did not decrease (Borghans, et al., 2014). Next to apprenticeships, there are some projects with the assessment of prior learning (VPL) that give access to regular or tailor-made courses leading to a recognized qualification, and a limited number of contract courses. There are also some good examples of successful projects undertaken by regional MBO colleges. An interesting example of these can be found in employability and career-changing projects in the building industry.

In the construction industry there has been a big project since 2006 targeting employee career development and change. Since 2006, all employees have, according to collective labour agreements, an individual right to career advice and training, organized and funded by the Sectoral Training and Development Fund (O&O Fund) for the construction industry. The career path is supported by a professional organization, with independent process consultants in 12 advice centres, spread across the country. The career path offers employees the opportunity to develop and to retrain themselves for another job, including retraining for a job outside the sector. The career path option is voluntary and free for all employees. A participant may, once in the five years, sign up for such a career path.

Adult training is a very diverse field, consisting predominantly of non-formal education, often involving customization. That is, the training offered is tailored to specific professional aspects and/or the wishes of the customer. Private providers are seen as more successful in responding to changing economic circumstances and a changing demand for training with a fitting educational offer. The Social Economic



Council (SER, 2012) prompts MBO and HBO to become more sensitive to the needs of companies and make education more adaptable, also by enlarging the work-based learning component. The council expects that this adaptability in the future will contribute to an adequate supply of LLL.

Two important considerations are the accessibility and visibility of the offer and clarity and certainty about the quality of the training. Commercial training providers also offer a limited number of qualifying courses, leading to an accredited qualification. However, most qualifying education for adults is delivered by publicly-funded institutions (OCW, 2014). Nevertheless, these are only geared towards graduate participants to a limited extent, be they employed or unemployed, due to the legally-required diploma-oriented range of funded education. The number of participants in qualifying post-graduate education that is provided by funded institutions of higher education is declining, partly as a result of some scandals involving universities delivering quick low-quality courses using public funds (SER, 2012).

## 2.4 Validation of Prior Learning

Since the nineties, a growing number of adults acquire qualifications using some form of accreditation of competences acquired elsewhere (Duvekot & Brouwer, 2004, 2015) and in this way make a link between initial and post-initial learning. Through validation of prior learning (VPL), post-initial learning and working experiences can earn formal recognition in terms of a qualification at secondary or even higher professional level. In many sectors VPL is part of the HRD approach. Its focus lies on sustainable employability and mobility of labour. The use of VPL is strongly linked to initiatives in which sector programmes for non-formal learning are used as standards in the VPL-process. The next step in this process is making links between national and sector standards through the Dutch Qualifications Framework (NLQF).

The development towards a national system for validation of non-formal and informal learning in the Netherlands started in 1998. Under the umbrella-term ‘EVC’ – which stands for ‘Erkenning van Verworven Competenties’, or in English ‘Validation of Prior Learning VPL’ – the system evolved into a threefold approach (Duvekot, 2014):

- Recognition of prior learning – a formal procedure that leads to the award of a validated portfolio or Experience Profile (*‘Ervaringsprofiel’*)
- Accreditation of prior learning – a formal procedure in which a candidate can secure accreditation for their learning outcomes measured against a qualification standard in the form of a so-called Experience Certificate (*‘Ervaringscertificaat’*)
- Validation of prior learning as an umbrella-term that includes all forms of validation: the two formal ones already mentioned, but also the informal use of VPL by any individual or organisation when trying to link prior learning outcomes to a formalized career within the LLL perspective, such as a job-promotion, transition from work-to-work, validation as a volunteer, etc.

VPL can take on a formalised form or a more open, informal use as an instrument for a diversity of LLL perspectives (Duvekot, 2016). The Experience Profile and Experience Certificate are formal certificates that can only be awarded on behalf of accredited VPL-suppliers. These certificates are used to assess and recognise the competences (both vocational and general) of a candidate in relation to sectoral standards (branch or sector qualification), MBO qualifications or HBO qualifications, awarded by universities of applied sciences, and the Open University. Candidates for the Experience Profile or the Experience Certificate can use these certificates as an independent document, as the basis for further informal or non-formal learning and for career development or – as most people do- to obtain exemptions in learning programmes and a partial/full qualification. The Experience Certificate can be used by the candidate to request exemptions from the exam committee of a body awarding a qualification. Awarding bodies then decide on whether or not to grant the exemptions. In theory, a full qualification can be granted if the applicant has proven that their learning outcomes are in line with the expected learning outcomes for that particular qualification. This however, seldom happens. There are neither proper procedures in place nor the will and interest on the side of educational institutions to grant qualifications in this manner.

Different phases can be distinguished in the development of this validation system in the Netherlands (Duvekot, 2014). Until 2006, the main objective was to encourage the taking up of VPL. Government, schools, colleges, universities and social partners focused on creating favourable circumstances for developing and implementing VPL in many contexts: in work, in voluntary work, in reintegration and job-seeking, in education and training. This approach focused on changing the learning culture in general. From 2006 onwards, a greater focus was placed on quality assurance to increase the accessibility and transparency, and to guarantee the value of informal learning by means of certification or qualification.

The Onderwijsraad (Education Council) (2009) recommended establishing an agency in “secondary and higher education for adults”, to grade courses in a national qualifications framework for non-formal learning, and to strengthen the demand for learning through the provision of more open educational resources. In 2011 the Ministry of Education, Culture and Science commissioned the development of the Dutch Qualifications Framework (NLQF), which was constructed in close cooperation with experts and stakeholders in the field of education and training. The National Coordination Point (NCP) of the NLQF is an independent body responsible for the development and implementation of the NLQF. The NLQF aims to facilitate student and labour market mobility by providing an insight into all the qualifications levels recorded in the NCP register. This includes national qualifications delivered in MBO and HBO institutions, but also by private training providers. It also includes sectoral qualification structures (like that for the police or firefighters) and training certificates.

Since 2013, a new strategy for validation has been defined in relation to the government’s drive to move towards a ‘participation-society’ in which all citizens (stakeholders) have to take ownership of and responsibility for their own role in work life and LLL (OCW, 2014; Duvekot, 2009). The focus in this new strategy is

more on using VPL as a formal instrument for validation of learning outcomes, linked not only to national qualifications, but also to sector standards (sector level training with post-initial or non-formal learning). This entails an enlargement of the scope of the two formal terms Experience Profile and Experience Certificate. The new policy aims for a broader range of validation opportunities for Dutch citizens. The outcome of this reorientation is closely linked to making VPL a tool in both learning and working processes aimed at sharing ownership of methods and instruments, such as portfolio building, assessment and validation (CFHOW 2012; SER, 2012). With the implementation of the NLQF, students in MBO and HBO will have additional opportunities for achieving levels in the national qualifications framework by means of their further, post-initial learning. This is important because it will give their initial qualification an internationally recognized level, as well as provide them with support for managing their own LLL by giving formal recognition, assisted by the validation methodology of VPL, to learning experiences which have taken place since the completion of formal schooling.

Recognition of post-initial learning and work experience in acquiring a MBO qualification can take different forms:

- recognition of prior experience when entering an MBO course;
- equating certificates from providers of post-initial courses and trainings to MBO certificates; and
- possibilities for working people to acquire an MBO qualification entirely in their work environment.

Notwithstanding the policy attention given to VPL in the Netherlands and the resulting formal opening of possibilities, these options remain underused (Doets, van Esch, & Westerhuis, 2008). Various policy documents point to the importance of VPL (Golsteyn, 2012; OCW, 2014; SER, 2012), but the development and implementation of VPL procedures remains primarily the responsibility of education providers, who take little initiative on this front, maybe because they – as course suppliers – have little to gain in this regard. Relatively speaking, the first option of the recognition of prior experiences when entering an MBO course, is made use of the most out of the three. VPL is generally set up to offer workers tailor-made curricula within regular education. The recognition of previously acquired competences takes the form of testing and examining these prior experiences. In this perspective, VPL is a particular form of examining (partial) qualifications that belong to a complete curriculum. Central to this approach are the possibilities for recognition and valuation of relevant qualities and qualifications on entrance to MBO courses, other than those attained through school-based examination. However, even in this form little use was made of VPL. In many institutions VPL has barely taken hold. Though it warrants a certain interest, many projects that make use of this approach are still in their start-up phase. A major obstacle to the use of VPL is the difference in criteria for competences between the standards set by the national qualification structure and the indicators considered relevant by businesses. Also, the complexity and attachment of many VPL testing procedures to subject matter is reported to be a barrier to its wider usage (Cedefop, 2002).

Since 2000, the number of VPL procedures has shown a slight increase. VPL procedures are used particularly in MBO in the sectors of administration and technique on levels 2 and 3, and in most cases serve as a stepping stone for further education. Converting VPL certificates into recognised qualifications (or even using them for that purpose), is often a problem because examiners of ROCs do not or only partially accept the VPL results as valid (SER, 2012).

A temporary measure introduced by the government in 2009 supported jobseekers to access VPL. Employers who need to make staff redundant because of the economic crisis can offer the employees concerned a procedure for procuring an Experience Certificate or an Experience Profile. The scheme is targeted at three different specific groups: young unemployed persons without a starting qualification, the unemployed, and employed people at risk of losing their jobs. Only those who do not hold a Level 2 vocational qualification are eligible for the young unemployed group scheme. The other two groups can use the measure to access qualifications up to the level of HBO to support their mobility in the labour market. The cost of this procedure is partially subsidized by the employment agency.

The second option, namely, equating certificates from providers of post-initial courses and trainings to MBO certificates, which would thus automatically grant the right to partial certificates, is availed of even less. Recently, a large number of diplomas and certificates for military personnel from the Ministry of Defence have been equated to partial certificates from the qualification structure. This equation is mainly aimed at increasing the added value of military diplomas and certificates in society. This equivalence makes it possible to raise the civil worth of the military diplomas. Experts in the area of VPL assume that adults are regularly granted exemptions upon enrolment in vocational courses based on the qualifications they have already acquired. These are however not structural, but ad hoc agreements between those involved.

The third option, namely, offering possibilities to working people to attain a recognized qualification entirely within the workplace, is also rarely availed. In theory, a full diploma can be granted on the basis of VPL, if applicants can prove that their learning outcomes are in line with the expected learning outcomes of a diploma. In practice, this is very difficult for schools and universities to facilitate. In the case of MBO schools there are better chances for candidates to get access to and exemptions for a specific programme, because MBO is based on a national qualification system in which all diplomas are based on the same set of competences all across the country. This is different for universities due to their autonomy in designing their own learning pathways for obtaining the nationally-agreed learning outcomes. The Dutch system of MBO offers the possibility to attain a qualification in two equal educational trajectories. The difference between these two curricula comes down to the ratio between learning at school and learning at work (see Chap.1 and Chap. 11). For example, the work-based vocational training trajectory (*beroepsbegeleidende leerweg – BBL*) should have a workplace component of at least 60% of the total study time, but it could go up to as much as 100%. Although this possibility exists formally, it is hardly ever used. This was pointed out recently when the possibility of an entirely workplace-oriented trajectory was conceived as an alternative

for young people who had dropped out of school prematurely. Apart from young people who have recently dropped out of vocational training, this trajectory could also be relevant to others who do not have a qualification at the desired secondary level. However, until now all trajectories for dropouts, young people with learning difficulties and working adults have comprised combinations of school-based and work-based learning. The idea that a qualification can be entirely acquired through work-based learning is new in the Netherlands and has not acquired broad support as yet, although both the Social Economic Council (SER, 2012) and the Education Council (Onderwijsraad, 2012) make some recommendations in this direction.

Since June 2012, a national tripartite covenant signed by the Ministry of Education, the trade unions and the employers' organisations sets out objectives for stimulating the actual use of VPL by implementing VPL as a labour market guidance tool and by incorporating sector standards in the VPL process (OCW, 2014; Duvekot, 2016). The covenant offers a national framework for the further design and implementation of validation. The scope of the Quality Code has been extended, since the summative use (i.e. the qualification approach of the Experience Certificate) of VPL now not only links personal portfolios to standards in MBO or HBO, but also to sector standards or qualifications. In this way, VPL focuses on awarding exemptions and offers access to qualifications that are recognised in the labour market. This access affects both public-funded as well as private-funded education, as long as they supply national accredited standards on MBO or HBO level.

VPL has been embedded in the programmes of ROCs and HBO colleges (universities of applied sciences). The Open University also offers VPL in some programmes. Additionally, some ROCs and HBO colleges hold a licence as accredited VPL providers. In order to gain access to and exemptions for a diploma programme by means of an Experience Certificate, candidates need to secure their own funding for VPL, because VPL is only allowed as an instrument for access and exemptions when the candidate has not yet entered the programme. In the context of learning and working, a VPL procedure can be used to assess and recognise the competences, both vocational and general, of a candidate in relation to the standards or finishing levels of an internal or sector standard (branch or sector qualification), a MBO qualification or a HBO qualification. This assessment results in an Experience Certificate which can be used as an independent document proving the value of learning experiences measured in terms of a formal qualification. Candidates are free to choose what they want to do with their certificate and are not obliged to follow any education afterwards.

Research into the quantity, impact and quality aspects of VPL is mostly incidental (e.g., Ecorys, 2012). There is also some research on the success and failure factors of the VPL market and the effects of VPL for the individual and for organisations (Van den Dungen, Heuts, & Venema, 2012). The main outcomes of this research are as follows:

- There are no principal or legal barriers to the provision of exemptions for examinations and/or tests.
- There are no principal or legal barriers to the provision of exemptions for educational components.

- The quality of VPL providers and the Experience Certificate requires continuous attention.
- The quality of the evaluating organisations must be secured.
- Professionalisation of members of examination boards is very important.
- There should be more opportunities for further development after the issuing of an Experience Certificate.
- The interplay between VPL providers and examination boards can be improved by better information exchange.

It can be concluded that the opportunities for VPL-based qualifications are only used partially and not in great numbers. The main reason for this is the focus on full qualification on the one hand, and the lack of flexibility inherent in the schools that deliver these qualifications on the other hand.

## 2.5 Conclusions

This chapter has argued that the role of Dutch MBO and HBO in lifelong learning is limited. Although there have been a number of policy papers and some interesting projects and good examples illustrating the subject, it can be concluded that on the systemic level the past 20 years in the Netherlands have seen a stagnation in developments in public-funded vocational and professional education. This stagnation covers certification and recognition of prior competence, making courses more flexible, and contributing to training for adult workers. One of the main reasons for this is that MBO and HBO primarily are seen, by policymakers, managers as well as teachers, as initial education. This holds even though LLL is among the main arguments for choosing competence-based education (CBE) as a vocational and professional educational principle, both in the qualification structure and in the vocational and professional curriculum (Onstenk, 2004). CBE is supposed to lead to the desired learning experiences and learning outcomes, namely, competent professionals possessing an attitude of LLL. The challenge is to prepare students for the unpredictability of careers; such as changes in occupations, the spreading out into different branches after a diploma to sometimes very different professions (ROA, 2015); and to promote agency and employability.

The majority of the knowledge and skills that employees use at their workplace are learnt in some way while working. It is sometimes hoped that learning in the workplace can compensate for a low level of training, but in practice this seems to hardly be the case. Low-skilled workers learn more in the workplace than in a formal course, but often less than highly-educated workers. Currently, there is a rather broad policy objective in place to promote and validate informal learning in the workplace more effectively, also to acquire formal qualifications. Learning in the workplace takes place in the form of breaking in, peer feedback, work experience, following workplace trainings, participating in learning projects, and above all, working along with others in order to solve problems with new machines, materials, processes and methods for continuous improvement and innovation.



Employability and career learning are important objectives in HRD. The modern individualised knowledge-based society demands self-direction from its workers and citizens. They have to be able to find their own destination in the labour market, work, and life in general. From this perspective, education and training pathways should be designed and evaluated, not only with regard to direct (pursued and achieved) learning outcomes, but also with regard to their contribution to richer and more intensive forms of (informal) learning in the future work situation. This is important when it comes to innovative learning. Designing trainings for ‘new’ jobs presupposes knowing what these jobs will be. Innovation, however, goes hand in hand with ‘open end’ search and learning processes, both at the individual, and at collective and organisational levels. This not only makes new demands on the learning opportunities and the organisation of learning in work settings, but also on opening up more flexible ways to be awarded a recognized qualification, by getting access to flexible courses and VPL. In order for MBO and HBO institutions to enlarge their role in offering opportunities for lifelong learning, they need to adapt to regional as well as sectoral demands and to offer more tailor made, flexible courses and accreditation possibilities.

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# Chapter 3

## Transforming Vocational Education: Encouraging Innovation via Public Private Partnerships

Marc van der Meer, Jan Peter van den Toren, and Tammy Lie

### 3.1 Introduction: Promoting a Skills-Based or a Knowledge-Based Economy?<sup>1</sup>

For a long time Dutch socio-economic policy was captured by a previous event; The European recession in the 1970s. The proclamation of a *New Industrial Elan* in 1981 and the joint bi-partite *Wassenaar Agreement* in 1982, led to a long period of labour market reform with a strong role for social partners. Remarkably, it took another 20 years to put ‘innovation’ on the agenda. And after another 10 years, the Dutch government assigned VET and HPE greater recognition and set higher expectations regarding innovation, alongside their traditional roles for providing work-based training and access to the labour market. Individual VET-schools and HPE-universities of applied science are expected to support and even stimulate innovation by providing individual firms with lab facilities, educating future and current employees on new and innovative procedures, and educating creative young practitioners. In its ambition to stimulate VET colleges to support this transformation from outside, the Dutch government has chosen to subsidise

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innovation-focused collaboration between firms and schools in an open-ended, exploratory educational structure that combines the production of cognitive and vocational skills.

However, the optimal way in which vocational education can contribute to labour market dynamics and innovation can be realised, has not yet been fully determined in the Netherlands. The government aims to be among the top 5 most competitive knowledge economies in the world. Switzerland, with its productive economy and sound employment infrastructure, consistently tops this list. Countries such as Germany and Finland are considered leading countries, and following closely the Netherlands currently occupies a respectable fifth place, although countries at the top of the ranking fluctuate (World Economic Forum 2015–2016). At the same time, the position of the Netherlands in the area of ‘human capital’ and ‘education’ is much less favourable in other international rankings (Insead Ranking, 2013). Whatever the situation may be, it is now a better understood fact that a significant part of the economic growth results from the knowledge and skills of the workforce. In addition to traditional production factors such as labour, nature and capital, occupational knowledge has also become an important factor of production; and the VET system with its production of intermediary skills has to meet the increasing demands of the national economy.

In the Netherlands, VET-education is part of the second phase of secondary education. This type of education fulfils a key function both socially and economically. The VET system is the primary provider of human capital for many occupations in the private and the public sectors. Expertise acquired by nursing staff, metalworkers, desktop publishers, hairdressers, bookkeepers, construction workers, secretaries, et cetera, in upper secondary vocational education is, in other words, the backbone of the production and service industry in the Netherlands. The public investment in this form of education counts to 3.8 billion Euro; in addition private contributions for guidance of apprentices are currently 1.7 billion Euro (data Central Bureau for Statistics, 2015). So, the development of these skills is strongly supported by the Dutch government and industries.

Viewed from many international standards, the Dutch economy shows substantial positive economic outlook in spite of the deep economic crisis of 2008–2015. Employment levels are still high and (youth) unemployment is by international standards relatively low. The ageing of the workforce will likely lead to new demand for skilled labour in the coming years. Many social-cultural indicators score highly by international standards of wellbeing and welfare. Yet, in terms of socio-economic development, the Netherlands is like many Western countries deeply struggling with special challenges relating to reducing government deficits, company restructuring after the financial and economic uncertainties. There are social-cultural issues surrounding migration, integration and participation. These issues add to the quest for the development of a what is framed as a ‘durable knowledge economy’, which will guarantee the future of the Dutch economy in the long term as well.

It is in this context that transformation and redesign of vocation education is addressed. This occurs in three policy domains that compete for coherence: (1) vocational education, (2) the labour market and (3) innovation.

### **3.1.1 Domain 1: Vocational Education**

The concerns about innovation and knowledge in the VET-system date back to more than 30 years ago. Already since the Wagner Advisory Committee (1981) advocated a new industrial policy and the Rauwenhof Advisory Committee (1989) argued for co-makship, a lot of attention is paid in the Netherlands to the significance of collaboration between vocational education and business associations for the production of ‘job-specific’ qualifications. The Vocational Education Act of 1996 drafted a threefold ambition: (1) to train youngsters for a job, (2) to prepare them for further study and (3) to socialise them as members of society. The establishment of the ROC (*Regional Training Centre*) from 1996 onward was also initiated for this purpose, the concept being to bring different forms of short-term and long-term vocational education physically together under one roof. The idea was also to improve the connection between education and the labour market this way, both in the area of initial education and with respect to the retraining and continuing education of workers and those seeking employment.<sup>2</sup> In its governance, an important role was devoted to meeting the needs of organised capital and labour (Van Lieshout, 2008; Busemeyer & Trampusch, 2012). Social partners (employers’ associations and trade unions) are together with the VET-schools involved in the description of the qualifications and examination criteria. They are also jointly responsible for the recognition and quality assurance of the overall 230,000 companies where apprentices fulfil their obligations of learning on the job. So, within the VET-system an institutional position for representatives of the labour market has been guaranteed.

### **3.1.2 Domain 2: Labour Market**

A second institutional field related to vocational education is the domain of labour market policy and labour conditions that fully belongs to the prerogatives of the so-called *social partners*. Over the last three decades (after the famous Wassenaar-pact in 1982), labour market governance has undergone a process of decentralisation and fine-tuning, an attempted ‘coordinated decentralisation’ in which employers and trade unions negotiate employment conditions at an increasingly decentralised level (Traxler, 1995; Van der Meer, Visser, Wilthagen, & van der Heijden, 2003). In empirical terms, Dutch labour market participation has increased substantially to an active labour force of 8 million persons. At the end of the so-called Great Recession in the Netherlands in 2015, of these some 11% were unemployed and unemployment concentrates above all for those persons and school drop-outs lacking a starting qualification (at least MBO-2) for the labour market. In addition, about 23% of the workforce works under flexible employment conditions, so young people normally start their career with uncertain job prospects. Social partners advise the

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<sup>2</sup>For the regional ambitions see the chapter in this book by Anneke Westerhuis/ Marc van der Meer.

government in their traditional fora such as the bi-partite Foundation of Labour and the tri-partite Social-Economic Council in The Hague. Employers and trade unions actively participate in the implementation of national policy goals by negotiating on collective agreements, which define employment conditions, working hours, additional social security and work and care arrangements, both on the sector level (approximately 200 agreements) and on the company level (approximately 800 agreements). Since the 1980s, collective labour bargaining in the Netherlands includes sector-specific training agreements in the form of sector training funds (*O&O-fondsen*). Training agreements are defined in the stipulations of the collective labour agreements and are implemented by the administration of these sector training funds (Van der Meer & Van der Meijden, 2013). The boards of these training funds consist of representatives of trade unions and employers organisations who determine the policies of these funds. The role of these funds varies greatly for individual sectors. The current Cabinet (a coalition of the liberal VVD and the social-democratic Labour party, established in 2012) has introduced, related to collective bargaining, the instrument of both sectoral and regional Investment funds, based on co-financing between government and businesses. Currently about 77 sectors and regions have drafted an investment-plan many of them including programmes for improvement of work-based VET-programmes (overall these plans have a total budget of 300 Million Euro paid by the sectors and another 300 Million Euro paid by the government).

### ***3.1.3 Domain 3: Innovation***

Recently, a third separate field has emerged. *Innovation* has become an important policy domain, which is placed under the auspices of the Ministry of Economic Affairs. The underlying idea is that companies in each field of technology, branch or sector or particular industrial district, have to operate at their own innovation frontier, i.e. the imaginary line of product development where they compete on the renewal and improvement of products and services at the highest level of productivity. One could expect that companies that operate close to the innovation frontier show the most internal dynamics and have the highest ambitions with regard to upgrading skills and competencies. At the innovation frontier, companies and research institutes will invest in vocational education and training and contribute to build a complete, underlying innovation system, which provides a competitive advantage and economies of scale. The idea of an innovation system was first coined at the level of a country: ‘the elements and relationships which interact in the production, diffusion and use of new, and economically useful, knowledge ... and are either located within or rooted inside the borders of a nation state’ (Lundvall, 1985), but an innovation system can also be defined on a sectoral or regional level. Also here, innovative performance results from the interplay between governments, research institutes and social actors (Gregersen en Johnson, 1997).

In the Netherlands, the government has identified nine so-called ‘top sectors’ to strengthen the international competitive position of the country. In all nine top sectors top teams are formed in which the following parties are represented: an innovative SME (*small and medium-sized enterprises*) entrepreneur, a scientist, a civil servant and a chairman from the sector (Van den Toren, Hessels, Eveleens, & van der Meulen, 2012). Since 2011, the top teams have become players in the field of vocational education, as they formulate ambitions from the perspective of competitiveness, innovation and human capital. Based on input from scientists and companies, various opportunities and challenges specific to each top sector were mapped out detailing their ambitions. They have installed particular human capital work groups of which the primary task is to develop human capital agenda’s (HCA). Other parts of these action plans are innovation contracts which bring together public and private parties to build critical mass in research by directing additional funding and resources around targeted research and innovation areas. The formation of these contracts has led to the increased need for innovative governance structures, either through the existing relations with business organisations or by creating novel forms of cooperation and co-makership between schools and business. As (Musiolik, Markard, & Hekkert, 2012) argue, the presence of existing networks is crucial for the performance of innovation systems.

### ***3.1.4 Outline of the Chapter***

In this chapter we analyse the interplay amongst these three institutional domains. Since the seminal work of (Hall & Soskice, 2001), a growing academic tradition concerns the relationships between national institutions, innovation and social-economic performance. Education is increasingly seen as an important factor in this infrastructure, no longer as a given asset, but in the form of an active knowledge institute and as a disseminator of knowledge and developer of ‘human capital’. Yet, within countries striking differences occur across sectors, which may affect their innovative performance. Sectors vary in their innovative competitiveness, the organisation of the sector and the manner in which their innovation systems function optimally. At the same time national governments aim to strengthen their innovativeness through national policies and new institutions. In this chapter, we therefore elaborate on how the ‘old’ and ‘new’ institutional regimes influence vocational education and its role in innovation in the Dutch context. Our central question is: what is the nature of the aimed transformation of vocational education in the Netherlands, and under what institutional conditions does this government approach impact VET in different sectors and regions?

We start with an overview of the three mentioned policy domains in vocational education, and the institutional constraints and stimuli that facilitate joint agreements on public private partnership. We then analyse the antecedents and practice of the current top sector policy – the focus point of innovation policy in the Netherlands, with an eye towards the European Horizon 2020-agenda. In section three we study

the current institutional change in vocational education, and in section four we grasp how institutional conditions have effect in two regions and two sectors. Section five concludes.

### 3.2 2000: Implementation of the Lisbon Agenda

In the Netherlands, partnerships between VET and business were first laid down in the Industrial Act of 1919, which defined two preliminary systems: a school-based and a work-based system of vocational education (*see introduction of this book*). After the Second World War, schools and organised business worked together in the field of VET, which was best considered as a separate institutional field. In 1981, Shell-chairman Wagner aimed to break with the practice of small-scaled and fragmented vocational and industrial policy and argued for *A New Industrial Elan*, that simultaneously formed the basis of a strong industrial policy in the field of innovation, decentralisation of industrial relations in the domain of the labour market and the establishment of a modernised higher professional education in 1986 and later secondary vocational education in 1996 (Visser & Hemerijck, 1997; Van Lieshout, 2008).

Under the influence of the 2000 Lisbon Agreement, the objective of the Labour Foundation (the bi-partite alliance of employer and employee umbrella organisations in The Hague) was to realise further collaboration between VET and the business system. For this purpose, 6 years after the WEB-Act of 1996 had passed Parliament, Het Platform Beroepsonderwijs (*The Vocational Education Platform - HPBO*) was established (annual budget 20 million), which aims to achieve a number of objectives via subsidised innovation arrangements. These compose: (1) the progressive transfer and upward mobility of students within the vocational education sector from VMBO to MBO to HBO, (2) the realisation of adequate student influx, (3) the coordination between the content of education programmes and practical developments via innovative projects and accompanying research; and (4) the provision of workplace learning to enable students to make a connection between what is learned in school and actual practice.

In many instances the approach was used to strengthen the quality processes in schools, though the specific goal of the HPBO's Innovation arrangements is innovation across the boundaries of each educational institute or business organisation, by adding strategies for 'vertical innovation' to the existing so-called 'basic innovation' in the schools and the 'lateral innovation' aimed at knowledge dissemination. The collaboration between education and business is considered essential in this context. The argument is that the business community is 'the future employer of the student' (Source: BVE/BDenI-2004/4075). Since then various temporary and structural forms of co-makship and hybrid learning environments have been initiated: varying on the theme of the 'company in the school' and 'the school in the company' (Smulders et al., 2012; Van der Meer, 2014; HPBO, 2016). Some of the many examples are the RDM Campus, the *Waterfabriek (Water factory)*, the *Groene*

*Campus (Green Campus)*, the *Duurzaamheidsfabriek* (Sustainability Factory) (see chapter xxx in this book) and, in fact, all the recent Centres for Innovative Craftsmanship and Centres of Expertise, which are discussed below.

### 3.3 From 2010: The Top Sector Approach

During the first decade of the new Millennium, employers' associations and business representatives have promoted the importance of innovation and the development of the emerging knowledge economy. To drive innovation, government has set up in 2003 a National Innovation Platform, which comprised renowned representatives from research, the business community and politics. There were various concerns. First, the number of STEMS-students in science, technology, engineering, and mathematics were decreasing. Recruitment campaigns and new types of educational programmes have been propagated, set-up by government-funded body Science and Technology Platform (*Platform Bèta Techniek*, PBT), which promotes technical and technology-oriented education in all types and levels of schools. Since budgets for Research and development in education add up to no more than half of the Dutch average of 1.7 %, far below the Europe-wide desired level, it is urgent for businesses to protect practical-oriented applied research, thus passing-by more fundamental university research (for data and critique, see Onderwijsraad, 2010). Following from the revised European Lisbon strategy's objectives for 2010, various national strategic agendas have been drawn up for the long-term development of the economy: the so-called Knowledge Investment Agenda and the 2020 Competition Agenda. These agendas go to great lengths to emphasise the importance of innovation, technological development, while achieving a highly qualified workforce and continuous retraining and in-service training.

From 2010, the Innovation Platform in the Netherlands expired, but the Dutch Government institutionalised a new type of industrial agenda. Employers aimed to give vocational education more focus, but applied an indirect strategy by setting the Minister of *Economic* Affairs in play with the Top Sector Approach. These forms of active decision-making amongst government, social partners and the education sector determine to a large extent the subjects for research and knowledge transfer in the top domains of vocational education. Research funds are limited, however.

Simultaneously, the Minister for *Education* sought to make publicly funded education more effective, efficient and result-oriented under the label '*Focus op vakmanschap*' (2011) (*Focus on craftsmanship*). As is outlined further below, this agenda above all seeks to budget control and financial engineering in public-private partnerships, more than -if at all- craftsmanship. Notwithstanding its name, it appeared that the VET-agenda invigorated shorter study routes, whereas the top sector approach encouraged craftsmanship and innovation. From 2010, for nine top sectors a cohesive policy agenda is being developed. The top sectors are the traditional leading sectors in the country. The top sector approach can best be seen as a 'backing the winners' approach in Agrifood; Chemicals; Creative Industry; Energy;



High Tech Systems and Materials; Life Sciences and Health; Logistics; Horticulture and Propagation Materials; and Water.

In these designated sectors also a sectoral *human capital* agenda has been defined, highlighting the expected and preferred skill profiles in each of the nine sectors. These HCAs include objectives on the quality and quantity of vocational education, stressing the importance of skill development and life-long learning. In some sectors, the targets have become more concrete and are already being implemented. In other sectors, there is a long way to go in supporting the open, ambiguous and experimental character of the approach.

In its Coalition Agreement of 29 October 2012, the new Dutch government reinforced this position by encouraging companies, knowledge institutes and (regional) authorities to work together more intensively to further increase the innovative strength of the Netherlands. Sectoral policies are set in close collaboration with the business community and knowledge institutes aiming at a more demand-driven approach on the formulation of government policy. The cabinet also focuses on the strength of SME's as initiators of innovation and employment: "the road to new knowledge is harder for the SME sector than for large enterprises" (Letter 11 February, 2013). Human capital and education subsequently became a key element of the national Technology Pact of May 2013, realised between government, employers' associations, trade unions, the education sector and separate regions. In November 2015 a similar pact has been negotiated to increase cooperation between hospitals, care institutions, insurance organisations, universities and vocational education in the health and care sector.

### 3.4 Further Enhancing Co-makership

The Science and Technology Platform (Platform Bèta Techniek) has been given the task to set up top centres for technology and education: *Centres for Innovative Craftsmanship* (CIV in MBO) and *Centres of Expertise* (CoE in HBO). With an government investment of 250 million Euro, knowledge development and knowledge dissemination can take place. Leading examples are the centres of expertise in water technology; automotive; genomics; biobased economy and the Chemelot innovation and learning labs in higher professional education; and the centres of innovative craftsmanship in MBO-areas such as logistics; coatings; instrument building; agrifood and process technology. These centres promote and stimulate innovation in vocational education and introduce transformation of these educational institutes: students solve real-world challenges or questions and work at innovative solutions to strengthen economic competitiveness. The funding of these centres incentivises educational institutes to meet the specific needs of firms with regard to vocational education. As a prerequisite for establishing these centres, schools have to meet the demands of regional clusters and ecosystems.

According to the midterm evaluation of the audit committee of PBT, the implementation of the business development of the centres is meeting its three envisaged ambitions: first, improving quality of education while enrolling and upgrading more students (in the pilot participated 16 VET-colleges and 1708 of their students, and 8 HPE-institutes reaching 2050 students); second, supporting innovation in companies (33 companies in VET and 67 in HPE); third, enhancing flexibility and mobility among the company staff. Simultaneously, substantial differences are being noted between HBO and MBO, the former granted with more financial resources, is attracting more additional contract research incubating novel company services, whereas MBO is merely restricting its ambition to the executing and transforming of regular educational activities and thus remains innovation towards companies substantially below the standards foreseen in the originally design of the approach (PBT, 2014).

To summarise, with its top sector policy, the Dutch Government strives for new forms of collaboration between companies, the government and knowledge institutes. This action led to a public debate about the extent in which the vertical, sectoral and sector-oriented structure of the Dutch society is to be considered an obstruction to the ability to rapidly apply knowledge for the development of new products, services and processes. In the media, arguments were presented advocating a transition to horizontal alliances which allow room for creative, cross-sectoral collaboration and can fit within integral, regional investment agendas but “should not limit themselves to a few regions or sectors which, in the eyes of the Ministry, may be considered among the top” (Financieele Dagblad, April 7th. 2011).

Also the Dutch Scientific Council for Government Policy (WRR, 2013) rung an alarm about the quality of lower and higher (vocational) education in spite of the innovations of past years. It concluded that education in the Netherlands must be structured differently to achieve a stronger productive economic climate in the Netherlands. The WRR put all its eggs in the single basket of developing a new perspective vision on education as the foundation for the new economic order. The leading thought is that active knowledge circulation must be promoted in a comprehensive approach of learning and working.

The Dutch Government has put these arguments aside, since it introduced a new institutional regime of the Top Sector Approach and the national Technology Pact of May 2013 aiming to stimulate regional innovations. In response to the critique, the government continued to enhance the collaboration of companies and schools with establishment of the *Regionaal Investeringsfonds MBO* (the Regional Investment Fund Vocational Education) in 2014, opening subsidies for partnership now in all sectors of the economy.

### 3.5 Institutional Change: The Adaptation of Regulation of VET

Due to these forms of political intervention, a complex new institutional regime is thus arising in the Netherlands in which businesses and education are requested to collaborate and to agree on goals, instruments and mutual investments in vocational education. Streeck (1997) argues that voluntaristic choices of actors are formed by a variety of normative and institutional constraints; also referred to as 'beneficial constraints'. Despite the fact that institutions may be perceived as an imposition, at the macro level institutional mechanisms can be effective. As a consequence of these threefold policy systems, VET, labour market and innovation, different institutions are built onto each other and influencing regional practise. The combination of traditional and new institutions can be summarised in this way.

In the WEB-act of 1996, VET colleges were granted extensive autonomy within the boundaries of the law. The basic principles implied that students had freedom of educational choice and that VET colleges generally provided any student with an education programme. The social partners were responsible for determining the qualifications in vocational education. Previously, social partners were already involved in curriculum development and determining examination criteria due to their administrative role in the sectoral knowledge centres (*KBB's*). This role and their responsibility for negotiating collective agreements allowed the social partners to frame practical vocational education. Employers influenced the level of participation of pupils in the school-based route (BOL) and work-based route (BBL) respectively, because they provided internships and training days for students, for which they were partly compensated via a tax credit (*Wet Verminderende Afdracht*). The VET system, thus, provided education that met the needs of as many students as possible. VET colleges are under supervision of the Dutch Inspectorate of Education and are assessed based on the quality of education, graduation rates and dropout (see Chap. 5 by Van de Venne et al., this volume). In this system, VET had an essential regional function and, based on this regional task, attempted to make the road to new knowledge more accessible for the SME sector by teaching both young people and adults up-to-date, job-specific knowledge and skills, tailored to regional requirements. From 1996 to 2011 VET thus was organised in such a way to meet regional needs with substantial autonomy for schools.

In 2011, the educational regime in VET shifted under the label 'Focus on Craftsmanship', which reduced the length of study routes (with clear incentives to reduce study costs). Keywords are: more intensive education, a remodelling and flexibilisation of the qualification structure in order to meet societies need for flexible, modern employees, reduced course length, professionalisation of teachers, national exams in language and mathematics and a good fit with the employment market. In addition, the new focus contains a solid emphasis on the quality: concerted efforts are made to further professionalise teaching staff, the management of educational institutes and the quality of the education itself (course content and examination). We should add that in HBO, which has no institutionalised structure

of cooperation with companies equivalent to the qualification structure and joint responsibility of apprenticeships in MBO, also a further proliferation has been addressed by the Veerman Committee (2010): commending the need of levelling-up, allowing for flexibilisation and differentiation of higher professional education. HPE's on their turn do possess an embedded research capacity, which is lacking in VET-institutes.

Both VET and HPE-approaches fit well with the conclusions of the Innovation platform in 2009 and the start of the Topsector approach in 2010, which granted innovation and social partners a mutual interplay to which vocational education should adhere. The newly developed human capital agendas in each of the top sectors have an influence on vocational education from the perspective of competitiveness and innovation. Innovative developments are fast-paced and in order to progress in vocational and higher education, since 2010 educational institutes were given the opportunity to apply for a *Centre of Innovative Craftsmanship* (CIV) respectively a *Centre of Expertise* (CoE). Companies can influence vocational education when they participate in such centres through committing time and financial resources. When agreements are reached between companies and VET-colleges, both can apply for public funding provided by Ministry of Education. After funding is granted, these forms of co-creation have to adapt their curriculum and educational specialisation courses in such a manner that flexibility and adaptation to changing market conditions is expected. As the influential committee Van der Touw (2013) argued, here particular institutional barriers (for example on taxation and mutual recognition of competences) may rise, hindering further adjustment between schools and the labour market and the direct practical professional application of new knowledge. The annual progress of the centres is monitored by an external audit committee. As we will see, such a system of co-makership requires a governance structure allowing for both an upgrading of the education curriculum as well as mutual adjustment of the co-makership with the ambitions and variety of national, regional, and sector-specific alliances and structures (see Smulders et al., 2012; Heemskerk & Zeitlin, 2014).

Although causalities have never been studied, it is important to take into account that only about 5% of such SME's (the world VET is primarily delivering services to) are to be considered as highly innovative 'frontrunners', 17% is 'developer', 19% is 'applicant'; 33% is 'trend-follower' and the remaining 27% is 'non-innovative' (Panteia, 2013). It is exactly in such front-running smaller and medium-sized companies, that a 'joint learning architecture' between schools and companies can best be built (Van der Meer and Pétit, 2010). As we however may presume: for schools the distance to the innovation frontier varies per sector due to the sector characteristics. In a large chemical plant direct collaboration between school and company is more easily organised than in a sector such as logistics with 10,000 companies. From 2011 onwards VET schools can apply for additional funding when reaching agreements with firms in their region. However, the possibility to reach these agreement is dependent upon on several conditional factors which determine the deepening of collaboration between schools and companies.

### 3.6 Factors Determining Competitiveness and Innovation in Sectors and Regions

VET and HPE thus are increasingly seen as an element of regional competitiveness. In practise however, the way in which schools can achieve this depends on the actual clustering of firms in regions and sectors. As Porter argues, economic competitiveness is dependent on national and regional factors. 'A cluster is a geographically proximate group of inter-connected companies and associated institutions in a particular field, linked by commonalities and complementarities' (Porter, 1990, 2000). In such a cluster, companies are part of an innovation system, which is characterised by the presence of technology of the companies that are at the frontier of innovation (Bartelsman, Haskel, & Martin, 2008). In highly organised (often traditionally industrial) sectors, mutual trust between companies may emerge, which enables them to act collectively and invest in public-private partnerships. In their now famous study on 'Varieties of Capitalism', Hall and Soskice (2001) claim that nations vary in the extent to which they seek out partnerships and collaboration. However, this approach is also applicable to the differences between sectors and regions, due to the fact that variety occurs in the degree of organisational associability (Traxler, Brandl, & Pernica 2007). So, within a nation state, sectors and regions have different conditions for innovation and not automatically all stabilisers will be sufficiently available. Regions may lack capacities to create necessary agreements and some regions will be more successful than others (Cooke et al., 1998; Tödtling en Trippl, 2005; Crouch, Schröder, & Voelzkow, 2009). According to Leydesdorff, Dolfsma and van der Panne (2006) and Nauta and Gielen (2009) a successful regional innovation system will be the result of enduring and focused cooperation between the 'triple helix' of companies, knowledge institutes and governments. In any successful economic cluster, intensive and interactive networks will connect and exchange knowledge, resources and talent.

These theoretical ideas are translated into the policy interventions of the Dutch government to improve competitiveness by encouraging new forms of co-creation between schools, research and business companies. However, their effectiveness is strongly influenced by the nature of technology, innovation and employment in firms and the availability and cooperation of schools and research centres. To explore the combination of economic reality and the mixture of regulations in the fields of VET, labour and innovation, we have selected four different cases that are indicative for the social-economic and institutional variety in the Netherlands. Two factors are analysed to provide insight into the degree of innovation in the region: innovation strategy and clustering.

First, companies have diverse dominant competitive and innovation strategies. Some are primarily based on knowledge and innovation, others are based on geographical factors and closeness to consumer markets. These strategies, for the large part, determine the frontier of innovation, either the frontier is found in the Netherlands, or otherwise beyond the national borders. When the frontier is located within the Netherlands, companies benefit from a more complete national innovation

**Table 3.1.** Research design

		<b>Distance to the innovation frontier/Complete innovation system</b>	
		Large /incomplete	Small/complete
<b>Clustering of companies</b>	Physically clustered	Creative Industry	High Tech Systems and Materials Twente
	Physically distributed	Manufacturing Industry in North Holland North	Agrifood

system. The extent to which companies operate internationally, or the classification of ‘open’ and ‘closed’ sectors (Iversen, 1999), is seen as an important indicator of the distance from companies to the frontier of innovation. Di Giovanni and Levchenko (2009) found that open sectors which frequently deal with high volatility, differ from the local economy and are more specialised in nature than closed sectors. Furthermore, ‘small states in world markets’, such as The Netherlands, can only prosper in the presence of open sectors that have access to sufficient highly skilled workers (Katzenstein, 1985; Iversen, 1999; Visser, 2003). Hence, the first indicator is the extent to which companies operate close to the innovation frontier.

Second, innovation is often concentrated in a region in the form of an innovation cluster or ecosystem. Some technologies and innovation systems require and create a strong regional clustering. The extent of geographical clustering of companies varies per sector and region. Regions with a high position within Europe, are expected to be located nearby the innovation frontier, so with innovative firms who want to put their pressure on the VET/HPE system and are willing to invest in transformation of VET/HPE. Regions where sectors have a weak position within Europe, mostly lack these big innovative firms that pronounce their innovation ambitions towards VET. The variation in competitiveness of regions has consequences for vocational education, with its strong regional orientation and focus. Hence, the second indicator is the extent of geographical clustering.

These two factors illustrate the variety in Western economies. To explore these two factors we will describe four cases. These four studied cases vary on these two axes, the distance to the innovation frontier (or the extent to which the region hosts a complete innovation system) and the extent to which businesses are physically clustered or geographically concentrated: the top sector Agrifood (nation-wide, but with its research centre around Wageningen University in the province of Gelderland), the top sector Creative Industry (national-wide with its focal point near Amsterdam- province of North Holland); the top sector High Tech Systems and Materials in Twente (the Eastern part of the province Overijssel) and the Manufacturing Industry in North Holland North. These case studies are introduced in the next paragraph and their location on these two axes is shown in Table 3.1.

Our focus was to discover the institutional conditions that support the emergence of new forms of public private partnerships within vocational education. In this perspective, it is important to note that not all regions achieved an agreement on a joint co-makership; some regions didn’t reach an agreement and some proposals were not granted for public funding. This institutional precondition makes it neces-

sary to bring in a further explanatory element in our analyses. Public governance implicitly presupposes the existence of effective organisations. In other words, the Dutch government holds an implicit bias in its policy development by trusting on local business partners to organise, negotiate and agree in the establishment of joint co-makership institutions on behalf of their members. VET and HPE colleges are expected to hold close relations with companies and organisations and to be able to reach agreements, regardless of their distance to the frontier and extent of physical organisation.

To explain the variation within local level partnerships a third factor, therefore, should be taken into account: the level of organisation of the industry in administrative associations and networks which enables and facilitates agreement with other parties such as educational institutes and (local) governments. Research on cooperation and coordination has found that cooperation can be stimulated or reinforced when this results in better outcomes or higher revenues. Schmitter and Streeck (1999) distinguished between the terms 'logic of membership' and 'logic of influence': when companies are willing to unify, collective agreements can be reached, which individually could not have been negotiated. The 'logic of goal formation' ('are we aiming at the same institutional set-up and ambitions of co-makership?') and the 'logic of effective implementation' ('are we creating an effective form of joint initiative') are then important functions, which provide benefits to the collective. The extent to which firms are (or can be) organised is a third factor which explains variation.

These three institutional dimensions (innovation frontier; regional closeness; and associability) are explored in the four case-studies. Our expectation is that in a highly organised sector, companies can be persuaded to coordinate with and invest in vocational education easily. However, this can also lead to rent-seeking of actors acting as a closed-shop. This form of collaboration mostly serves incremental innovation. To encourage more radical innovation – which comprises a smaller share of all innovation - an appeal is often made to innovative SMEs. However, innovative SMEs likely cannot be effective when they are isolated or when they lack large companies in their surroundings that can bring their ideas to the market. Large companies seem to be more successful at reaching agreements than smaller companies. Large companies, especially multinationals, are adequate in building their own networks, both regionally as well as internationally. In addition, large firms have larger resources and maintain bi-lateral relations with the government and politics, which ultimately contributes to finding public funding. Small firms are considered to be relevant for innovativeness, large firms deliver necessary upscaling and organisability.

### 3.7 Four Case Studies

The core elements of the four case studies are summarised in Table 3.2. These case studies consisted of analysis of statistical figures and policy documents and by conducting interviews with key informants from business and educational institutes



Table 3.2 Economic and organisational variety in four cases relevant for VET and HPE

Competitiveness and innovativeness	Agri-food The sector is led by several internationally operating corporates such as Friesland-Campina and Unilever who compete by efficient and knowledge intensive production.	Creative industry Dutch companies serve as supplier for national companies and customers. There are several internationally known entrepreneurs in the Dutch creative industry e.g. Marcel Wanders, Rem Koolhaas and John de Mol.	High Tech Systems and Materials Twente Twente has several Original Equipment Manufacturers (OEM-ers), containing capacity to upscale and offshore production.	Manufacturing industry in North Holland and North Companies in North Holland North organise production capacity for other sectors. They supply for local companies and OEM-ers in several top sectors. Flexibility and quality are important competitive factors.
Export	●●●●●	●	●●●●●	●●
Labour share in costs	●●	●●●●●	●●●●	●●●●
Organisation of companies/industry	Companies are affiliated with both sectoral, regional and national associations	There is a low level of associability, also due to the large share of independent business owners. Several trade associations exist and recently one umbrella employers' organisation has been established.	Most companies are members of a large trade association (FME) with regional offices. SMEs are affiliated with a separate employers' association for metal industry.	Companies are members of diverse trade associations. Furthermore, there is one regional manufacturing organisation.
Organisation of knowledge development and innovation	Organised by one Topinstitute for Knowledge and Innovation: TKI Agrifood.	Topinstitute Knowledge and innovation CLICKNL.	Part of Topinstitute Knowledge and innovation HTSM.	There is no Topinstitute. The province North Holland has identified five clusters with organised boards such as the Energy Board.

(continued)



Table 3.2 (continued)

Organisation of vocational education	Agrifood There are 13 agricultural VET colleges with nation-wide coverage and to some extent regional specialisation. On 8 locations HPE is delivered.	Creative industry Several competing VET colleges exist; HPE possibilities are offered in all major cities.	High Tech Systems and Materials Twente There is one VET-college and one HPE with a leading role for the regional economy.	Manufacturing industry in North Holland North Two VET colleges which prepare for professions in the manufacturing industry. One HPE has a location in the region.
Collective wage-setting	The national collective agreements for agri-food is negotiated at sector-level.	There are several competing collective agreements and in some cases no collective agreements.	There are related collective wage agreements for metal and metallurgy sector.	Several collective agreements in manufacturing, construction, metallurgy et cetera.
Sector training funds	All employers are affiliated with one sector training fund.	Several smaller sector training funds exist and recently an umbrella organisation has been established to coordinate training.	Three main technical sector training funds exist that are all part of the collective wage agreement in the respective metal sector, metallurgy sector and installation branch.	Several sector training funds are competing.

Five bullits means 'strong'; one bullit is 'weak'. Four is 'medium strong'; three refers to an 'average score' and two means 'medium weak'.

about the innovation pattern in regional labour and the role of VET and HPE therein. It appeared that all these sectors and regions – in the period at the end of the economic downturn- were facing quite similar questions: how to upgrade qualifications in order to remain competitive while keeping up with the innovation frontier, what kind of new strategic relations to build with schools and research institutes, and how to make use of the new financial resources the government was providing. At the same time we find that the basic structure of these case studies were quite divers. In the following section, we summarise our findings per case-study and indicate to what extent new public-private partnerships have been created. We report on a qualitative basis about the institutional and employment dimensions on the following issues: the degree of competitiveness, export, labour share (5-points scale), and the way in which business, education, knowledge providers and labour are organised. Here subtle differences occur that can only be understood from the way Dutch corporatism is organised. In some sector various employers' associations and trade unions exist, which negotiate a number of collective wage agreements, this being the collective basis for training funds and apprentice-schemes. These organisations are the primary actors to initiate new public private partnerships with schools. In other sectors a more centralised picture of industrial governance arises with only one umbrella organisation and a widespread picture of economic activity, which creates another set of strategic alternatives. After the presentation of the basic dimensions of the cases, we illustrate how each of the actors has realised – or have not – public private partnership of VET.

These four cases are typical for the Netherlands but also represent the variety of Dutch sectors and regions. The top sector *Agrifood* is one of the sectors in which the Netherlands historically has a strong international position. The nature of work processes is changing, companies are diversifying their product-market combinations leading to an need for upgrading of qualifications. To ensure proper international competition, it is important that the sector remains innovative and increases scale and productivity. In order to compete internationally, in the Human Capital Agenda for 'Agrifood' high ambitions have been defined, while production in the Netherlands still takes place in many relatively small companies and larger cooperatives firms which deliver and distribute across supply chains. Regional cooperation between the industry and agricultural VET colleges is deemed necessary to ensure a sufficiently qualified labour force. It is challenging for VET colleges to match the content of the education with the needs of companies, however in several regions VET colleges have succeeded in doing so. Specialisation, which is often necessary in order to continue family businesses, requires students to travel long distance for specialised education. Reaching agreements between industry and VET colleges is difficult since there is no natural concentration of innovation and innovative companies. At present, one nation-wide Centre for Innovative Craftsmanship has been realised in 2013, offering regional meetings points for specialised training programmes. This shared structure among companies is considered as a new organisational form for VET, given the need for upgrading the increasingly diversified nature of economic production. It is however far less obvious which actors can take on a leadership role in deepening the curriculum of these institutions.

After the diminishment of the printing industry due to economic crisis and the rise of desktop publishing and the offshoring of production to countries with cheap labour, trade unions and employers have searched for new venues to represent their interests. Jobs have disappeared in printing companies, but at the same time new jobs had been created in the so-called *Creative Industry*. This top sector consist of many small companies, often working as self-employed professionals, with spin-offs companies and dispersed activities in innovative niche markets, regionally concentrating in metropole districts such as Amsterdam, Eindhoven, Utrecht, Arnhem, Hilversum and Rotterdam. The Creative Industry consists of several smaller sub-sectors, varying from media to life style and applied technology. Regarding the cooperation between vocational education and industry, which consist of many small business and self-employed professionals, sufficient interaction is necessary between parties from different regions in the country. The creativity of the individual professionals surely is an important source of innovation, but hinders the collaboration between companies in joint associations. There is no national organisation that facilitates the partnership between vocational education and industry. Admittedly, one VET-college in Amsterdam initiated an independent Centre for Innovative Craftmanship, but it failed to receive funding from the government and only in 2014 it was granted a government subsidy for public private partnership. In this case, we conclude that the poor associability of companies hinders joint collective action in the setting-up of new partnerships with VET and HPE-colleges.

Traditionally, the *High Tech Industry in the region Twente* is a strongly interconnected industry with a recognisable profile and traditional high level of associability, which is dominated by a few innovative companies in the metal and electrical engineering industry. Furthermore, the region is characterised with the presence of SMEs and large companies, which have entered in partnerships with VET colleges without the fear of mutual exclusion. In particular, so called ‘shared training companies’ (*opleidingcentra*) (traditionally offering work-based BBL-programmes) have provided a strong basis for ‘networking’. As a result, the region benefits from the opportunities enabled by public private partnerships. The Centre of Innovative Craftmanship (‘Techwise’) has a broker position and coordination role in these networks. The CIV in Twente has developed an agenda for innovation and strategic human capital policy, and there is obvious collaboration between school VET-college and HPE in this region.

This is in contrast to the *Manufacturing Industry in North Holland North*. North Holland is the province that in its southern part hosts a metropole (Amsterdam), although its northern part is considered a more diffused region. The industry in the northern part mainly consists of SME companies which supply to the rare Original Equipment Manufacturers in the region (such as Tata Steel and Boon Edam), multi-nationals elsewhere and to local consumers. The Manufacturing Industry is expected to offer flexibility and deliver high quality products. In the coming years, the industry will be confronted with volatile production volumes. However, due to the fact that there are many small and dispersed companies in the region, the visibility and accessibility for technical students is limited. In addition, young people are often unaware of career opportunities in engineering. Also, the companies in the

region have varied profiles and expertise, which hinders the associability. Companies have not entered in partnerships with educational institutes such as CIVs, partly due to the fact that no clear regional strategy has been defined. In 2013, several trade associations have launched a Technology Council to take on this role. In this region there is no pivotal employers’ association with a clear identification of industrial interests, nor a self-evident spill-over from collective bargaining results. The conditions for establishing a public-private partnership are thus much more limited in comparison with the region Twente.

### 3.8 Explaining Public Private Partnerships in VET and HPE

The characterising factors, which have been identified in the regions and sectors above, appear to influence the degree of co-makership in the various examined cases. Economic and technological factors partly explain the degree in which public-private partnership has been established. This is summarised in Table 3.3.

The sector Agrifood includes many small companies spread across the Netherlands. Given the tidiness of the companies, the collective educational infra-

**Table 3.3** Explanation of public private partnership

	Agrifood	Creative industry	High Tech Systems and Materials Twente	Manufacturing industry North Holland North
Status PPP:	●●●●	●●	●●●●●	●●●
Effect of institutional dimensions:				
1. Competitive strategy and distance to innovation frontier	+	-	++	-
2. Concentration and clustering	-/+	-	+	-
3. Associability	+	-+	++	-
Most important sectoral/regional boards	Innovative areas of interest are pursued by nation-wide boards in the Topsector Agrifood.	There are currently no agreements on VET on a strategic level. Many graduates become individual business owners, education cannot rely on a big role of business.	One dominant sector (metal industry) is able to reach agreements with VET-institutes. Centres of Innovative Craftsmanship serve as platform for firms.	Dispersed industry and education. Few formal agreements at the strategic level.

Five bullits means ‘strong’; one bullit is ‘weak’. Four is ‘medium strong’; three refers to an ‘average score’ and two means ‘medium weak’.

structure is of great importance in this sector. The presence of many small sector organisations leads to scale problems and hinders labour mobility. In contrast, the top sector Creative Industry includes both the well-organised graphics industry as well as new and less organised companies such as gaming and design firms. Also, a large number of self-employed professionals are active. In this sector some regional concentration and specialisation of companies and educational institutes occurs, but also here innovation is fragmented and companies take a rather isolated position. Further, in the top sector High Tech Systems and Materials several regional concentrations of companies from diverse sectors in which cross sectoral mobility and institutions are crucial. The Twente region is considered such a cluster or ecosystem. In the North Holland North region many small technological companies operate in the Manufacturing Industry. Due to the large geographical distance the visibility and accessibility of these firms is low, which hinders the cooperation and coordination between companies and education.

Physical concentration, thus, seems to have a larger impact of co-makership than the nature of the competitive strategy and the distance to frontier. However, there is a relevant third factor. Two of the cases (i.e. High Tech Systems and Materials in Twente and the Creative Industry) are clusters formed by specialised and knowledge intensive firms, which benefit from solid investments in vocational education. However, these necessary investments do not automatically take place. In Twente the presence of large companies is beneficial, whilst the lack of these companies appears to be problematic for the Creative Industry.

In comparison to the first factors (innovation strategy and clustering), this third factor appears to have a stronger influence. The level of associability of companies and education determines the ability to connect and become part of clusters and new structures of co-makership. Twente can be considered a highly organised cluster which reinforces public-private partnerships. The Creative Industry and Manufacturing Industry in North Holland North are less organised which complicates the formation of public-private partnerships. That is not to say that also here within HPE's and VET-institutes a number of smaller cooperative forms of co-makership between school and companies may exist, but these are not substantial enough to apply for the financial resources available in the Techniekpact. In contrast, a traditionally highly organised sector such as Agrifood contributes to reaching public-private agreements and co-makership, despite the fact that the economic and physical conditions are suboptimal in this sector for becoming part of clusters and new structures.

We can conclude that the logics of 'beneficial constraints' apply to vocational education. Freedom to negotiate within boundaries stimulates cooperation. Because VET and HPE only received funding as a consequence of reaching an agreement, in a lot of cases firms and educational institutes came together to negotiate on a plan. From 2010 to 2012, 72 coalitions of firms and educational institutes reached an agreement on collaboration. In 38 cases, their plans were granted for governmental funding.

The economic configuration of each case is also visualised in the maps of innovation in the various sectors. We have composed three maps of organisational clustering in each of the three sectors at stake in our study (see [Annex](#)). These maps show the variety in concentration of companies. Companies are dispersed in agriculture, the map of the creative industry shows a weak concentration in so-called 'hot spots'. Furthermore, a strong concentration of companies is visualised in business networks in the High Tech Systems and Materials sector, both in Twente and the South Eastern part of the Netherlands. However, this is lacking in the region North-Holland North. The economic-geographical dispersion puts both agrifood and creative industry in a weak starting position, although the factor 'organisability' helps the first case and hinders the second.

### 3.9 Conclusions and Perspective

Schools and business have long-routed relations of joint initiative and provision of collective goods in Dutch VET (and to a substantially lesser degree in HPE). In recent years, both VET and HPE in the Netherlands have gained greater recognition and higher expectations regarding innovation, next to their traditional roles for education and the labour market. The newly initiated Top Sector approach and Techniek-Pact aim to further stimulate strategic collaboration between schools and companies, in order to enhance innovation of both the curricula and study programmes in schools and the production processes in business processes. In its ambition to stimulate VET colleges to support this transformation *from outside*, the Dutch government has chosen to subsidise innovation-focused collaboration between firms and schools in an open-ended, exploratory educational structure that combines the production of cognitive and vocational skills.

This chapter provides insight in the underlying policy assumptions of the new emerging institutional regime and how the various institutional preconditions influence the realisation and implementation of these policies. The economic and technological positions differ greatly for sectors and regions and therefore lead to different outcomes. We conclude that not only the distance to the innovation frontier and the critical mass of companies matters, but also the level and quality of organisation of companies can promote or hinder the transformation of VET and its role towards innovation.

The new policy initiatives place the general development of vocational education in perspective. The VET-system in principle can contribute to labour market dynamics and innovation. However, the way in which this can be realised optimally has not yet fully been determined in the Netherlands. The favoured model of public private partnership presumes agreements with highly organised and specific industries, which are not available in all sectors to the same degree. An important condition for

transformation of educational institutes appears to be the associability of companies, which is able to express its demands on the quality of education - but what happens when this condition is not met? A second important condition is that vocational education is considered part of the regional or sectoral innovation system with an identifiable focus – but what happens when this innovation system is incomplete? In that case, vocational education itself has to become a building block of the innovation system *from within*. VET-centres cannot rely on strongly and well organised firms, but have to take initiative and build their own centres to translate innovative concepts to SME's.

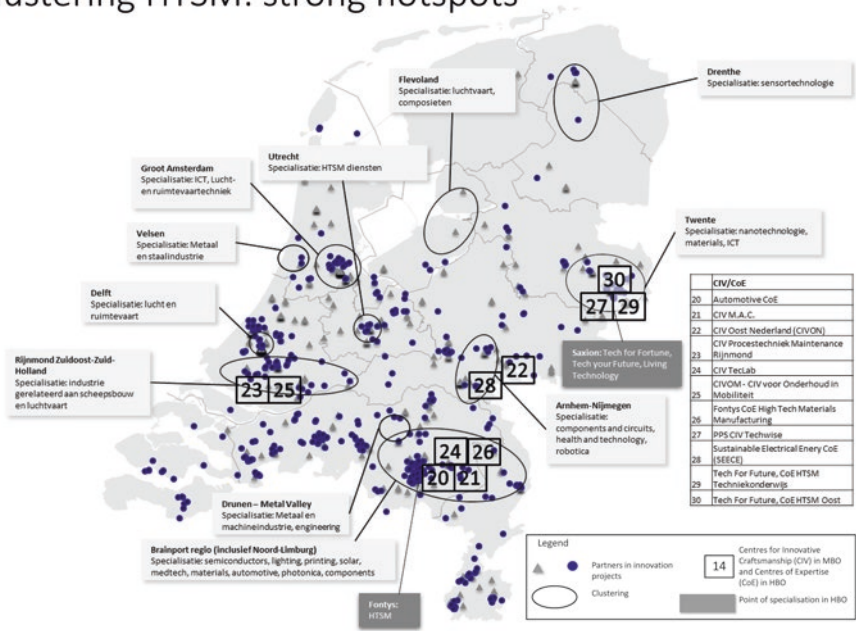
When overviewing the chosen government approach, we moreover must conclude that VET is relatively moderately targeted and re-directed by the measures of the top-sector approach. The number of centres of craftsmanship is limited (it is only a 'top of the top'-initiative) and the budget is not structural embedded. This notion is even more crucial, taking into consideration that about 90% of all work based learning in VET (*beroepspraktijkvorming*, BPV) occurs in small and medium sized companies. The concern for the future is thus a wider dissemination of the results of this top-down innovation agenda to the work floor and bottom-layers of VET-colleges. In 2014 and 2015 the new instrument of *Regionaal Investeringsfonds MBO* (Regional Investment Fund VET) has led to another 18 respectively 29 PPP's in VET and HPE and now not restricted to top sectors. So we are counting progress indeed, but still on a temporary and eclectic basis.

How the further renewal of VET and HPE will be addressed, is not only a government concern of creating public value. Companies will realize the importance of remaining close to the innovation frontier, and thus investing in the skills of their new entering and permanent work forces. The technological changes in their production processes must go hand in hand with the social innovations of their staff, enabling them to work in teams and to cooperate with other colleagues in partnering companies in their networks. The need for a life-long learning approach of boundary crossing and joint development has been addressed, but lacks urgency. A related question for the future is how exactly the core business of the companies to innovate and remain competitive can be translated to and incorporated in the curriculum and learning processes of the schools. This will require a further advanced monitoring system allowing for sectoral and regional differentiation, that goes beyond the current approach (developed by the Government and the Inspectorate) that is merely evaluating the durability of the initiated business model and the direct practical use of produced knowledge and insights. The pace of renewal of the schools will most likely be slower than that of companies under competitive pressure and technology-induced change. Therefore, it is a matter of public concern how to circulate the new insight and results of collaboration to other parts of the school-system and to deepen our understanding on how the curriculum for the future can further be adjusted or developed to meet the needs of labour market and society.

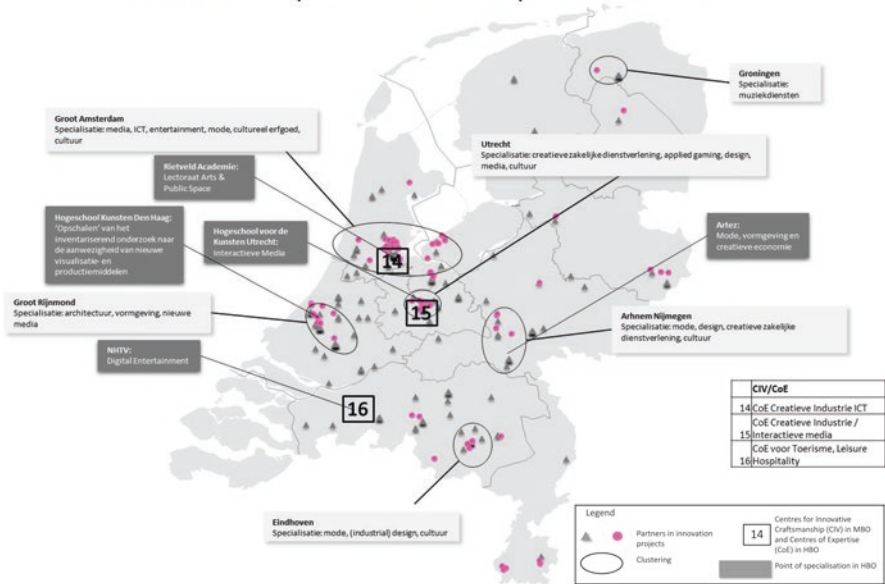


## Annex: Visualisation of the Empirical Cases

### Clustering HTSM: strong hotspots

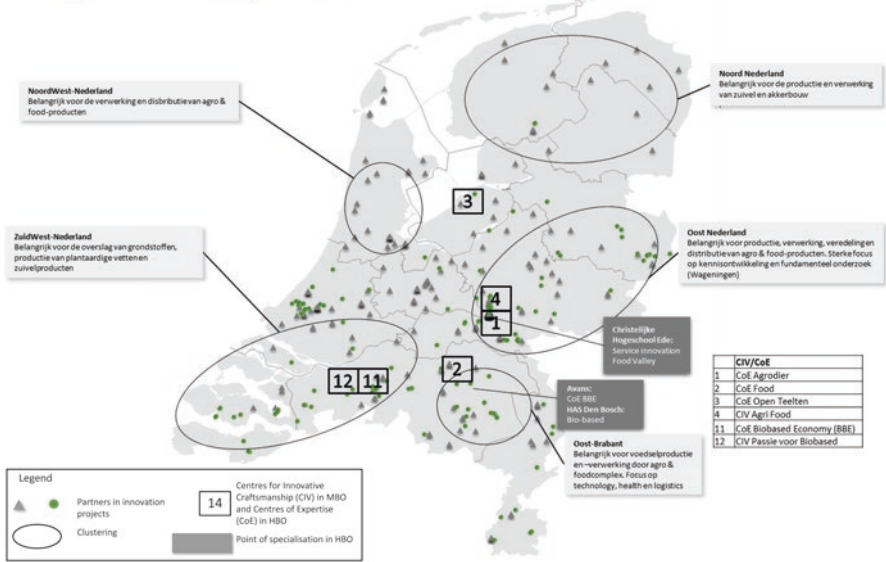


### Creative Industry: several hotspots – but weak





# Agrofood: dispersed



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# Chapter 4

## Great Expectations: VET's Meaning for Dutch Local Industry

Anneke Westerhuis and Marc van der Meer

### 4.1 Introduction

After a long period of discussions and successive mergers, the 1996 Adult and Vocational Education Act (in Dutch: *Wet Educatie en Beroepsonderwijs*; WEB) introduced a new school type in Dutch secondary vocational education and training (VET): a regional multi-sector, multi-level and multi-track institution for VET and adult education. Just as in schools for higher professional education (ISCED 5 and 6), the new school type in VET was supposed to serve students as well as industry with a wide variety of courses in terms of sectors and occupational fields, levels of competence and tracks (school- and practice-based)—that is, be a one-stop shop. The full name for the newly created multi-sector VET institutes is 'Regional Education Centre' (in Dutch: *Regionaal Opleidingen Centrum*; ROC<sup>1</sup>). The name stands for an ambition; in its programmes, as well in building networks and providing learning facilities for adults, an ROC has to be relevant for its region. One of the most important benefits to be gained from organising VET in mass institutions is greater responsiveness to the variety of needs of local industries. For this reason, ROCs should operate in the private market for lifelong education as well. In return, it was assumed that industry will commit itself to supporting ROCs in their public

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<sup>1</sup>Apart from ROCs, VET is organised in Agricultural Education Centres and specialist Trade Colleges. As almost 90% of VET students populate courses provided by ROCs, this chapter concentrates on school-industry relations from the ROC-perspective.

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and private capacities by, respectively, training new generations of skilled workers and purchasing training programmes from the local ROC. Cooperation between VET and the industry has its origin not in the founding of ROCs, however, but is the result of a long Dutch tradition. One might even argue that the ROC concept is the outcome of the involvement of industrial partners in shaping VET policy. Together with Australia, Denmark, Germany and Switzerland, the Netherlands is a case of a collective system of skill formation despite substantial differences in terms of control, provision, payment and relationships with general education (Busemeyer & Trampusch, 2012). Building on this tradition, ROCs are seen as a step forward.

The question we would like to answer in this chapter is how the process of the formation of ROCs affected VET's relations with local industry from 1996 until 2015. As political orientations changed over the years, the role intended for ROCs changed as well, which affected, if not complicated, relation-building processes in the region. Therefore, the subject we are going to address has three dimensions:

- *What ambitions did the government have by introducing the ROC in 1996 as a regional institute for VET, particularly with regard to school-industry relations?*
- *What roles have successive governments defined for ROCs in terms of relations to local business communities?*
- *How were these roles perceived by the ROCs and the industry?*

This chapter sketches policy changes over time. In line with the views of Busemeyer and Trampusch (2012), we aim to contribute to a better understanding of the consequences of the strategic manoeuvres of social actors, schools, governments and business organisations that have gradually evolved into the current VET-system. The introduction of the new school type in 1996 has been chosen as the reference point. As we will see, school prerogatives changed in an ongoing political search for optimal relationships between goals and ambitions of national educational policies on the one hand and changing industrial needs for skilled personnel in regional labour markets on the other. New political references, driven by tidal fluctuations in the economic and political climate, as well as profound structural economic changes, often ended in half-hearted arrangements between schools and industry, about which nobody was completely happy, nevertheless preparing the ground for new rounds of initiatives and expectations about mutual performances.

The chapter is divided into four sections. The first section (4.2) outlines the position of Dutch VET from a policy perspective, including the founding of Regional Education Centres, the most important school type in VET. Section two (4.3) outlines the origins of the ROC concept in terms of its aims and stakeholder relations at the regional and national levels. The third section (4.4) addresses the question of how relations between ROCs and industry developed and how industry engaged in the aims of the ROCs. Section four (4.5) concludes.

## 4.2 VET in the Netherlands

### 4.2.1 *Basic Principles of the Dutch Education System*

The Dutch VET system is to be evaluated as a model combining both state and market steering, with a signalling role for the social partners. After the formative moments of the VET system—the Law on Industry Education (*Nijverheidswet*, 1919), the institutionalisation of apprenticeships before WWII and the prominent position of social partners in shaping a role for VET in national re-industrialisation programmes—the launching of ROCs was considered as the end of a long line of system building. The government's ambition to root vocational education in a comprehensive education system was fulfilled, and in the all-round institutes open to many, young people could complete their route through the education system into the labour market.

It would be a misunderstanding to assume that Dutch schools, ROCs included, are instrumental to the government to implement its social and economic policies. In Europe, the Netherlands, together with Belgium, stand out in terms of a high level of school autonomy (European Commission, 2007). The '100 years school war' at the end of the 19th and the beginning of the 20th century ended with granting private bodies—for instance, groups of parents of a Catholic or Calvinist denomination—the right to found a school. In legal terms, the great majority of the schools are considered foundations under private law. For establishing a foundation, e.g. a school, only a notarial deed is required; no formal permission from the government or government-related bodies is needed (van der Ploeg & van Veen, 2001).

Founding a school is one thing, but financing its activities is another. As another outcome of this '100 years school war', schools are entitled to government grants covering all costs of education, subject to certain conditions. In primary education, for instance, new schools are only subsidised if the founders can prove the school will attract a minimum number of pupils. Moreover, the Inspectorate of Education is entitled to assess the quality of education in all schools and might advise ending government subsidies, or suspending accreditation, if the quality of education has not improved after a probationary period.

VET schools are also founded by private bodies, often (associations of) factory owners and managers from local industries. Many VET schools, in particular in industry and the manufacturing sector, can boast of a long history, most of them starting in the early 1920s after the *Wet op het Nijverheidsonderwijs* had passed Parliament and schools were financed—albeit partly—by the national government. As we will see, in later years government (subsidy) regulations became more strict, turning VET into one of the most regulated school types in the Dutch education system (Anderson & Oude Nijhuis, 2012; van Dyck, 2000).

### 4.2.2 *A Short History of the Formation of the ROCs*

One of the aims of the 1996 Adult and Vocational Education Act was to establish Regional Education Centres. But how could the government force schools to merge if their influence on school boards was limited, given the private nature of the schools? This fact largely decided the outcome of the merging process. Keep and Brown (2004) describe the run-up period to the 1996 Act as a gestation period: ‘*a lengthy process of enquiry, opinion sounding and forming, and design testing. The reflective nature of this process and the efforts taken to incorporate the views of a wide range of actors and the findings of research suggest a level of deliberative design that is relatively rare*’ (p. 258). This view is understandable in light of the English tradition of ad hoc reforms in a sequence of changes to isolated elements of an education system, but is not fully adequate as it wrongly suggests a national implementation process insensitive to policy manoeuvring.

At that time, after the expansion of school enrolment since the 1960s, the variety of VET school types was settled into three school types: (i) sector-based day schools offering programmes with a duration of 4 years, (ii) apprenticeships with a duration of 2 and 3 years, and (iii) a relatively new offshoot, sector-based day schools offering programmes with a duration of 2 and 3 years.

It was thought that these various programmes should be offered through one school type only. With ‘stick and carrot’ strategies, combining soft persuasion and conditional access to new budgets, schools were nudged to merge in two rounds, starting in 1986 (Onderwijsraad, 1990; Van Dyck, 2000). After the second round, the process leading to the founding of the ROCs, the great majority of VET schools found themselves in around 45 ROCs, each populated by on average of 20–30 thousand students (van Wieringen, 1996).

From the government’s perspective, the establishment of ROCs was *sine qua non* for an educational infrastructure adequate to meet industry’s needs (Ministerie van OCW, 1993). The term ‘infrastructure’ implies an effective allocation of services in geographical terms. This is exactly what the Minister of Education had in mind: the assignment of VET could only be fulfilled if ROCs had their own territory—namely, each Centre should serve a particular region.

For the school boards as well as for the social partners, this idea proved to be a bridge too far. School boards heavily opposed this concept, as—in their view—the merging process should be entered into on a voluntary basis, albeit to protect the religious history of the school. Given the private status of the schools, the government and the government-funded merging coordination unit could employ (budgetary) tools to stimulate merges but didn’t have the authority to enforce merging on a territorial basis, and were even powerless when VET schools were adamant to keep out of the merging process with support from ‘their’ economic sector. To this day the printing, fishery, woodworking and furniture-making, decoration, shipping, and food industries are served by small sector-specific and specialist VET schools (Trade Colleges; in Dutch, *Vakscholen*).



In the end, ROCs are the outcome of mergers based on what could be called pragmatic principles and random definitions of 'the region'. This merging process resulted, given the absence of clear rules, in an unique definition of 'the region'. In particular the larger cities are served by more than one ROC offering similar study programmes and courses, for instance. It could also have this result, as 'regions' have no formal status in Dutch political administration, with more than 400 municipalities and 12 provinces offering a variation of public services (such as social services, public health, education, water management, firefighting). In other words, ROCs are not unique in having their own regional demarcations.

### **4.3 ROCs and Changing Government Policies between 1996 and 2015**

#### ***4.3.1 The Origins of the ROC Concept***

The assumption of the 1996 Adult and Vocational Education Act was that only large-scale institutes (ROCs) would be able to generate 'governing power', to be effective in translating policy goals into institutional behaviour (van Dyck, 2000). Governing power was particular needed for taking a role in a smooth operation of regional labour markets. Simultaneously, from 1991 to 2001, the regional tripartite employment services under the coordination of a national board run by the government, businesses and trade unions were set up with 28 (later 18) regional offices. The original intention to have one ROC in 'a region' was indeed to facilitate cooperation between all regional actors responsible for regional labour market policies. ROCs were to join forces with regional social partner networks, local government and employment offices, without a clear view, however, as to who these partners exactly were, nor where the Centres would find institutional settings to join. This concept of public employment services was aborted in 2001 when a first round of liberalisations of employment agencies and public employment services was introduced (Van Gestel, de Beer, & van der Meer, 2009). In fact, social partner organisations as well as schools had their own reasons to oppose this top down approach of distributing ROCs across regions.

If not by acting on blueprints of regional partnerships, how indeed to establish relationships between ROCs and 'the regions'? Predecessors of ROCs operated on close and personal relations with local business people. If not at the national level, at the regional level Keep and Brown (2004) have a point. The gestation period did not end with the birth of the ROC concept; rather, it marked a new beginning. For example, one of the ROCs was formed after a step-wise merging process involving 150 juridical independent schools. The new—much bigger—institutes, sometimes the outcome of a process defined by historical relations and sometimes by coincidence (Lenssen, 2011), had to find their own way when it came to developing relationships with regional stakeholders, or better, to interact with regional actors, such as regional industry.



This process of establishing new relationships with a wider audience (not only companies and services, but also public and private employment agencies) coincided with the emergence of a neo-liberal orientation regarding the role of the state in economic affairs, introduced under the Liberal-Labour cabinet coalitions led by Wim Kok (1994–2002). Although both merging rounds had their origin in policy agendas, the assignments of the ROCs were heavily influenced by the then-influential New Public Management movement as a driving force for performing public services<sup>2</sup>:

Only resourceful institutes (in terms of programme facilities, sector relations, education specialists, budgets) are in a position to meet learner or industry needs for tailor-made programmes—for instance, in combinations of modules from different qualification programmes.<sup>3</sup>

ROCs—autonomous in terms of Human Resources Management (HRM), budget allocation and education planning—are in a better position to liaise with industry, compared to small and short-staffed traditional VET schools.

Only a limited number of institutes are cost-effective and efficient when it comes to policy negotiations with the Ministry of Education (van Dyck, 2000).

The government thus transferred organisational capacities to the schools, which were then responsible for their own organisational development and their educational climate (Moore, 1997).

Apart from introducing private sector management techniques in public services, the New Public Management movement stated that public services had to be performed as a transaction between purchasers and providers. Schools were no longer seen as public institutions in a public context validated by national policy agreements; the new concept was designed to stimulate competition and to define institutional relations in terms of open markets (Hemerijck, 2009). Competition between ROCs and the promotion of ROCs to become active on the private market for life-long learning were new policy priorities for Dutch VET (Bronneman-Helmers, 2011). The new policy framework brought a new element to the relations between ROCs and their regions; regions were no longer contexts for building networks with industrial partners, but would evolve into markets of students and local industry as well: markets to be conquered.

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<sup>2</sup>During the 1990s, many public services came under pressure to become more efficient and effective, so as to reduce their demands on public money, while maintaining the volume and quality of services supplied to the public. To achieve this, they were subjected to the introduction of various 'private sector' management techniques, known under the collective term of New Public Management (cf. Brignall & Modell, 2000; Noordegraaf, 2004; for a critique of market-failures: Wolfson, 2005).

<sup>3</sup>This was not in the least inspired by advice from two industry-led committees stressing the point that VET should be instrumental to the country's industrial revival agenda: the Wagner Committee (1983) and the Rauwenhoff Committee (1990).

### 4.3.2 *Tensions Between National and Regional Perspectives*

We have seen that through the WEB the government facilitated social and economic actors to engage in setting regional agendas for VET, playing down its own role in defining policy priorities for VET under the assumption that active engagement with local stakeholders would create a system of checks and balances in governing the ROCs. A self-governing constellation would emerge, the only condition being that ROCs should open up to the region; regional actors should be invited to express their wishes and expectations, and by doing so commit themselves to the ROCs' well-being.

The question which had caused so much upheaval—how to define a region?—would evaporate as regions became defined by the networks a ROC was able to build; under a market regime, local dynamics produced ROCs with unique profiles in terms of ambitions and programmes. Subsequently, these profiles sorted out actor relations: regional actors joined the network of a ROC whose 'brand' they liked best (Ministerie van OCW, 2005).

However, coordination mechanisms did not change and remained prevalent nationally and within sectors, the national qualification framework being the most important regulation mechanism (van Lieshout & Scholing, 2009). The framework defined, via sector-based social partner institutes, the output of VET as well as regulated the variety of school programmes. So a fundamental question became, '*How to define qualifications and attainment goals for VET in such a way that they are relevant both for lifelong learning and flexibility on internal and external labour markets and, at the same time, maintain their validity for firms and the practical character of VET?*' (Ministerie van OCW, 1997, p. 4). This question touched a fundamental tension in the identity of Dutch VET—how to be relevant to regional actors if the tools are validated at the national level.

In hindsight, allocating the task of producing VET's national qualifications, e.g. occupation-based qualification frameworks, to social partner-based intermediary organisations with very little influence of individual companies can be regarded as a flaw. Perhaps naïve, it was assumed that consensus between national interests and local needs will emerge in the process leading to the validation of the qualifications. However, as the direct lines of communication between companies and their national representatives have never fully materialised, many companies view qualifications as bloodless compromises, produced by officials.

The idea of being relevant for the region in a public capacity also faced another obstacle. Due to pressure from national sector-based social partner organisations, ROCs had to refrain from offering modular, tailor-made education programmes by using elements of full qualifications as building blocks. In the view of national sector organisations, the national qualification framework for VET was not supposed to serve as a menu of choice—not even by local industry. Only standardised, sector-specific programmes based on full qualifications should be offered. In the occupation-based labour market of the Netherlands, the view of national agencies that only VET-diplomas covering standard occupational profiles can serve as a

ticket to lifelong employment dominates. So with a national qualification framework only to be translated into standardised programmes, ROCs lacked the means to develop programmes that fit the needs of local industries (van Dyck, 2000).

This fundamental question about who is allowed to define VET's educational outcomes was put to the Social-Economic Council, the government's tripartite advisory body on socio-economic affairs. By suggesting a new concept for qualifications ('competences'), the Social Economic Council solved the problem only partly (SER, 1997). The more down-to-earth dilemma for the ROCs, whether or not they were allowed to 'compose' programmes with elements from several qualifications in the national framework—let alone the possibility of defining qualifications at the regional level—was never tackled. Although the mission of ROCs was to find their relevance in the region, the infrastructure laid down by national actor groups proved a robust safeguard for national interests.

### 4.3.3 *A New Era?*

Finding their own way implies that ROCs are not faced with solid policy agreements to mark the direction the process should be heading. In a process of action and reaction, as Bronneman-Helmerts (2011) illustrates, the position of the government in VET policies changed several times. Starting with launching the ROC-concept as a vehicle for public services, a new stage was reached when the market concept gained a foothold in public services, allowing for local differences and entrusting ROCs with autonomy to define education policy at the school and regional levels. This stage came to an end when public awareness grew that ROCs became too big to fail, as well as too big to handle.

By 2010, the days of non-intervention and regional freedom were over. The tone was set by a Parliamentary Inquiry (2008) into the effects of the 15-year educational innovation on the quality of Dutch education. Public intellectuals evaluated VET in terms of the devaluation of subject knowledge and declining competences in the Dutch language and arithmetic. Whereas insiders had grown accustomed to the gradual changes in the outcomes of VET—less focus on ready knowledge and more on skills and competences—public opinion woke with a shock, damaging the public image of VET for a long time.

In response, the government's Action Programme 'Focus on Craftsmanship' (2011) was a landmark in its explicit aim to limit school autonomy and to increase state control, a process also fuelled by the Great Crisis (2009–2013), compelling the government to retrench, for example, privatising educational programmes for target groups and limiting the variety of arrangements defined between schools and local industries, as well as the number of years young people and adults may stay in VET.

The label 'Craftsmanship', should not be misunderstood: VET programmes at level 4 were shortened by a year (from 4 to 3 years) and a cascade was introduced in the budget system in order to limit the length of time studying and to give schools and students an incentive to speed up.

Only after recommendations by the Social-Economic Council on 'Handwerk in Holland' (2013) to advocate Craftsmanship, a new policy letter (*Ruim baan voor vakmanschap, 2014*) was published. This letter addressed several areas, including new policy agreements (*Bestuursakkoord*) between the government and the Netherlands Association of VET Colleges aimed at reducing the student drop-out rate, effective study routes, and the quality of workplace learning to be achieved at the local level and confirmed in bilateral agreements between the Ministry of Education and each school (July 2014). And in 2015, all VET schools have delivered a strategic plan with a provision for quality assurance. In the wording of the Minister of Education, the schools have to become more innovative and smaller in scale, allowing for tailor-made arrangements with industry at the local level. Also, the new qualification structure, effective from 2016, is seen as functional to this goal as education programmes have to be rationalised, be reduced in size and allow for flexible specialisation in light of industrial needs in local labour markets.

As in many cases, derailments ('events') in particular brought the government to the conclusion that the benefits of opening VET to the forces of the market do not weigh up to the drawbacks. Also forced by public outcry, the government regained its position, as not only the quality of teaching and learning in VET becomes an object of public attention, but the ROCs themselves become a subject of public interest. Their size and the subsequent lack of transparency in budget allocation, the creation of new management positions, an ongoing proliferation of programmes to bring in more students,<sup>4</sup> the introduction of League Tables by the Inspectorate, and incidents of ROCs finding themselves on the brink of bankruptcy all fuelled the sentiment that ROCs had become too big to manage. On the other hand, schools had little strategic information allowing them to match the supply of students to labour market needs (Vermeulen, 2013). From the schools' perspective, they were caught between political and economic volatility. As one of the school leaders remarked: 'we are either caught by the dog (politics) or by the cat (economy)'.

Popular awareness grew that schools are multi-layered configurations of associations of various actors. Therefore, it was an illusion to assume they are in a position to respond directly and coherently to business demands (Bronneman-Helmers, 2011; Chin-A-Fat, Scherpenisse, van der Steen, van Twist, & Schulz, 2013; Commissie-Oudeman, 2010; Hooge, 2013). In particular, the bankruptcy of one ROC served as a wake-up call, leading policy-makers to publicly express their wish to halt the expansion of ROCs and to achieve a macro-efficiency set of VET provisions. In ROCs' hunt for students, penetration of schools in a wider area was no longer allowed and a committee of top advisors was installed to evaluate the regional distribution of specific VET programmes, given labour market developments. As a prelude to demographic trends leading to the reduction of student

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<sup>4</sup>Some ROCs could not resist defining growth in numbers of students as an end in itself. Accidents were inevitable and some became victims of mismanagement with excessive debt, having chosen a risky strategy either by engaging in take-overs with competing schools or by huge investments in new and prestigious buildings.

numbers, the system of coordinated reduction and rationalisation of provisions has symbolised a new era of system-efficiency.

All in all, the mission for ROCs was to find their *raison d'être* in the region. But neither the region nor the mission could serve as a starting point. In the end, regional demarcations were often the outcome of clever manoeuvring, and the mission was sensitive to changes in national policy, varying from stimulating the industry to express its individual and collective needs, to acting as a partner in helping to prevent students from dropping out, to engaging in public-private partnerships or to contributing to industrial innovation (Delies, 2009; Nieuwenhuis, 2006; Van den Berge & ter Weel, 2015). With incoherence between mission and tools, one might even wonder if there ever was a moment in their history when ROCs could cherish regional industry as their primary area of focus. The most recent, government-led reforms aimed at cost control, flexibility and excellence have just been initiated and have yet to yield results. Can we ever know whether rookie mistakes would have been sorted out if ROCs had been given time to overcome incidents while finding their way in the region, and incidents had been seized as learning points instead of arguments to tighten the ropes?

On balance, on the positive side, the government was successful in concentrating VET in ROCs and the schools still have a considerable autonomy on a number of policy domains. On the negative side, ROCs had to spend considerable time to define—or even better, stabilise—their regional borders and the nature of relations with neighbouring ROCs (peers or competitors?), preventing relations with many local companies from evolving beyond the stage of superficial acquaintances. The heyday of defining school-industry relations at the institutional level seems to have passed, giving way to a stronger focus on the role of industry in preparing VET students for careers in the increasingly challenging labour market.

## 4.4 A Closer Look into the Position of ROCs from Industry's Perspective

### 4.4.1 *Terms of Engagement*

When the WEB was prepared in the early 1990s, Dutch industry had recovered from the first and second oil crisis. The industrial base of the country was slightly shrinking, but the sectoral structure of employers and trade unions in the Dutch economy was still strongly organised, with elevated organisation figures among employers and strongly institutionalised multi-level collective bargaining agreements, which formed the basis of the relations of industrial associations with VET. Step by step, the labour market became more service-based, allowing for an increase of part-time and temporary jobs leading to substantial overall employment growth (Van Lieshout, 2008; Visser, 2002).

The basic idea of the WEB was to give equal position to the school-based route (BOL) and the work-based, apprentice route (BBL), allowing for pedagogical innovation and scale advantages under one roof. For ROCs, the drive to engage in cooperation with local companies was based on pedagogical considerations of levelling-up and making curricula up to date as well as having workplaces available as venues for work-based learning. For companies and their associations, on the other hand, economic considerations in the short or mid-term will enhance cooperation. From industry's perspective, VET's primary role is to provide companies with workers having the appropriate competences, via publicly funded VET-programmes (Hövels, den Boer, & Klaijnsen, 2007; Smulders, Hoeve, & van der Meer, 2012). In the public domain, ROCs and companies have a shared interest in the content and organisation of work-based learning, a constructive element of programmes in both BOL and BBL tracks. In the BBL-dominating sectors such as construction and metal, companies have established private training foundations to guide and train apprentices for 1 day a week.

Both tracks prepare for qualifications included in the national framework of qualifications, until recently, by the national umbrella organisations of the schools in cooperation with sectoral associations (the so-called Knowledge Centres for VET and Business). The introduction of a new 'competence-based' qualification framework, initiated in VET in 2004, and renamed 'occupation-oriented education' (*beroepsgericht opleiden*) in 2012 (see Chap. 3) proved to be a window of opportunity to intensify (public) school-industry relations, since competence-based learning presupposes greater involvement of companies in VET (Onstenk & Janmaat, 2006), not only because the number of VET students has risen significantly, but also because of the growing number of programme elements implying industry's involvement. Today some 230,000, mostly Small and Medium sized Enterprises (SMEs) are involved in managing workplace learning in VET. Thanks to these pedagogical innovations, industry found itself deeply involved in running regular national VET programmes.

To mark the importance of the provision of placements for the BBL and BOL tracks, the allocation of responsibilities for the quality and access to work-based learning (*beroepspraktijkvorming*) was set out in a national gentlemen's agreement signed in 2009 by representatives from the schools and business associations and the sector-based knowledge centres (KBBs, now dissolved and merged into S-BB). The protocol has been updated several times and never questioned nor evaluated. The agreement has been more or less automatically extended and prolonged. In a recent policy agreement between the government and the VET sector (as of July 2014), it has been negotiated to upgrade the information and quality of work-based learning and thus relations between VET schools and industry at the local level before 2017.

Hence, the most important interactions between school and industry are bilateral and relate first and foremost to student performance and study progression and only secondly to the adaptation of programme elements to company wishes, if not learn-

ing facilities. When asked, most companies are happy with this. Research outcomes show that for the majority of the companies, school-industry relations are part of their business as well as their social networks; with involvement in VET, companies show their social responsibility (Hövels et al., 2007; Van der Meijden, Westerhuis, Huisman, Neuvel & Groenberg, 2010).

The benevolent approach to VET came under pressure with the outbreak of the economic crisis in 2008. Companies started to evaluate the benefits of their (social) involvement in VET and vacancies for apprentices in particular dropped dramatically. Many private training foundations stopped operating, though sectoral training funds in the metal and creative industries, as well as in employment agencies, often helped to find new venues for private BBL programmes. Nevertheless, between 2009 and 2014, the apprenticeship track in VET (BBL) suffered a loss of 33% apprenticeship vacancies, dropping from 150,000 to 100,000. Another effect of the economic crisis was a (probably structural) loss of VET 2 and VET 3 level jobs in sectors such as construction, insurance and health care. When, in the aftermath of the crisis, companies started to invest in new technologies again, the technology push urged companies to level up and to increase the standards for employment (van den Berge & ter Weel, 2015; Van der Meer, 2014). Upgrading skills then became a necessity, particularly given the increasing administrative demands for safety, health and environmental considerations, urging, for instance, unskilled workers in cleaning and hospitality to obtain a VET qualification.

Simultaneously, ROCs were not very successful in gaining a foothold in the market for lifelong learning,<sup>5</sup> one of the reasons why the government introduced a multi-department-led task force with the specific aim of stimulating lifelong learning in the Netherlands, and subsequently strengthening the position of ROCs in the market for lifelong learning (2005–2010). The task force's ambition was both to institutionalise the demand side in the form of sustainable sectoral and regional networks (companies, chambers of commerce, regional employers' organisations, employment agencies) and to promote a flexible supply; ROCs in particular were to adapt their operating procedures and course designs. The task force's strategy was to raise the demand for lifelong learning by providing budgets to networks corresponding to the numbers of workers and unemployed a network aimed to be trained, subsequently forcing the supply side to respond. However, many ROCs were faced with demands they were unable to fulfil, given their standard operating procedures (Westerhuis & van den Dungen, 2011). As Delies observes, it is—in the context of school-industry cooperation—much harder to change the conditions for learning than the competences of the learners (2009, p. 230).

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<sup>5</sup>While the ROC merging operation coincided with higher enrolments in Dutch VET, rising from 450,000 in 1995 to over 500,000 in 2014, despite contrary demographic trends, the ROCs have only a modest 8% share of the private market of tailor-made courses (Buisman & van Wijk, 2011). ROCs are more effective in opening publicly financed VET courses to adults, as the number of adult learners (older than 27) has risen from 50,000 in 2005/2006 to almost 70,000 in 2011/2012 (Fleur & van der Meer, 2012). However, because of the economic crisis, the number of adult students has dropped by no less than 50% in 2014/2015.



But perhaps even more important with regard to the school-industry relations, empirical evidence suggests an underlying change in the nature of industrial relations in the open Dutch economy. Boundaries between companies are fading and companies are increasingly competing in international product markets. Labour market flexibility has increased enormously, especially for younger people. Approximately 22% of the overall active labour force (8 million persons) in the Netherlands in 2014 now has a flexible contract, up from 15% in 2004, whereas self-employment grew from 8 to 12% in the same period (TNO, 2015; Wilthagen, Verhulp, Dekker, Gonggrijp & van der Meer, 2012). These forms of flexible working conditions reduce the access to places for internships. Simultaneously, outsourcing and devolution of businesses have created new companies and reduced the size of existing companies. When activities are outsourced to *de jure* independent companies, their *de facto* dependence will increase. This strategy implies that companies which like to prioritise a high-performance strategy and create new knowledge chains between employees and experts from different companies need to stress the importance of collaborative social and communicative skills as new core-competences (Buitelaar & van der Meer, 2008). It is for this reason that schools reflect on the need for incorporating so-called twenty-first-century skills, such as entrepreneurship and digital skills in their curricula. It can be expected that, when the nature of industrial networks become even more flexible, industries will assess both the quality of the networks that ROCs provide and their agenda vis-à-vis alternative recruitment scenarios of manpower management.

It is also likely that in respect to the new post-crisis technology drive, employers are adding their voices to serious concerns about the quality and applicability of VET programmes for industrial needs. Leading multinational technology-driven companies organised in the Employers Federation for the Technology Industry FME express the need for innovative VET programmes; it is not sufficient to update learning outcomes within the context of the revised national qualification frameworks and the introduction of competence-based learning. New technological changes and an increasing labour market call for an upgrading of the VET system. This is not a new opinion. Already in responding to the Lisbon strategy,<sup>6</sup> launched in 2000, national business associations covering all sectors and leading companies, promoted the idea of the innovation of VET programmes at the school level by bridging and deepening relations between companies and VET institutions and sharing an *agenda for innovation*. Supported by the Foundation for Labour (*Stichting van de Arbeid*: bi-partite national policy platform for employers' associations and trade unions), the VET platform (*Het Platform Beroepsonderwijs, HPBO*) was established to enable innovative crossovers. Conditional for budget allowances from these programmes is the support, if not active involvement, of industry in the design and subsequent running of VET courses, to be developed within the realms of each

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<sup>6</sup>The Lisbon Strategy is the name of a plan launched by the European Union for the period between 2000 and 2010. Its aim was to make the EU the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion.



regional economy. It is not in policymaking, client relations or socially responsible entrepreneurship, but in co-creation of education and learning that local industries' role in VET has to be based. These activities promoting cooperation between VET and industry bring a new infrastructure based on geographical closeness between education and (local) business (Smulders et al., 2012).<sup>7</sup> In contrast to programmes to engage VET in industrial innovation, from 2010 onwards, stakes have been higher in the new initiatives, no longer defined by the Ministry of Education but within leading employers' circles.

This new context is found in national programmes prioritising economic sectors identified as the most competitive. This, in itself, is a policy change compared to the previous period of backing up disadvantaged regions. The industrial policy approach focused on nationally defined 'Top Sectors' though with a strong regional element, when it comes to the involvement of education. Under the framework of the Top Sector programme, public-private partnerships are created separately for higher professional education (*Centres of expertise*) and VET (*Centres of innovative craftsmanship*). In the new regional investment programmes, the knowledge basis and innovation capacity of the companies involved should be the basis of co-creating alliances with VET schools.

Notwithstanding the fact that school-industry relations are based on industrial innovation agendas and supported financially and intellectually by expert centres, the first innovative craftsmanship programmes are at most derivatives of regular programmes in their focus on improving the quality and excellence of the standard programmes, instead of supporting industrial innovation, like the HBO centres of expertise (Platform Bèatechniek, 2014). The new agenda launched by the Employers Federation in the Technology Industry FME and the Research Institute in Technology (TNO), combining applied technological research with competency and skills development to raise the competitiveness of leading 'smart industries', is a serious challenge to VET to link up with industrial innovation.<sup>8</sup>

#### 4.4.2 Evaluation

Industry itself, especially small and medium-sized companies, is not so much interested in the way ROCs define their political space and its limits, but in having institutions capable of responding to their human resource needs. In the period since 1996, the institutional approach—national stakeholders deciding the national VET policy agenda—has gradually lost ground.

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<sup>7</sup>See also Chap. 3 by Marc van der Meer, Jan Peter van den Toren and Tammy Lie in this book.

<sup>8</sup>There is a number of booklets and folders published to underscore the ambitions of this agenda. Up-to-date information can be found on the FME website, where Ineke Dementjé (chairperson) and professor Willem Vermeend have collected field lab results and progress reports of this initiative, aiming to integrate learning and technological innovation: [www.smartindustry.info](http://www.smartindustry.info). Accessed 29 November 2015.

For instance, national social partner organisations did not publicly defend the national sectoral infrastructure of the Knowledge Centres (KBBs) when they were dismantled in August 2015, to be replaced by the national organisation S-BB that is now responsible for a joint dialogue between VET and industry to protect the civil effect of the national qualification structure in an increasingly decentralised economy. Simultaneously, many education innovations were transferred to the Ministry of Economic Affairs, which introduced a new form of industrial policy, targeted in short-cycle programmes like the Top Sector approach with particular forms of joint public-private initiatives at the regional level.

Unfortunately, no comprehensive evaluation studies are available assessing the viability of the VET-industry networks at the local level. Do they still exist, and if so, in what numbers? In many cases, the regional offices of sector-based Knowledge Centres served as intermediators, bringing potential network partners together. With the abolition of the KBBs and the transfer of their activities to the National S-BB as of August 2015, the infrastructure of regional sector representation evaporates, as does, consequently, the silent forces dedicated to building bridges between regional partners. In terms of the position of ROCs in the market of lifelong education, we are more or less back to square one.

## 4.5 Conclusions: Industry's Relations to Dutch VET

In 1996, the WEB founded a VET system in the Netherlands, mainly through ROCs with parallel and equivalent school-based and apprenticeship tracks that were strongly embedded in national, sector and regional networks. Basically, the importance of this collaboration between schools and companies to facilitate learning in the workplace for young people—as part of either track—was not questioned. Personal relationships between schools and national and local business were close, and companies substantially invested in the VET system in terms of human resources and facilities.

We have seen that in national policy arenas, regional collaboration between ROCs and industry was mainly presented by politicians, policy-makers, advisory bodies and educational experts as a panacea for many ailments, to be solved by public institutes at the regional level (Bronneman-Helmerts, 2011). In this chapter, we have argued that over time the national, sectoral and local orientations aiming to shape school-industry relations have fluctuated, applying different definitions of what constitutes productive mutual relations in the region. From the beginning, industry was expected to cooperate with the ROCs in meeting VET's social aims, as well as addressing ROCs by helping out with competence development of its employees and even for product and process innovations. However, hard as it was in itself for newly founded institutes like the ROCs to widen their services at a time they were also expected to organise hundreds of programmes at various levels and in two tracks, as well as for industry to visualise the kinds of services ROCs can

provide on the other, ROCs and industry were faced with changes in the rules of the game, due to government interventions.

We thus conclude that after VET's emergence as an education sector in its own right sector, VET schools — ROCs in particular — first have been granted more (*Koers BVE*) and then later, under *Focus on Craftsmanship*, clearly less room to develop and deploy their own policy initiatives. Initially, in the 1990s, the government assumed that by creating a regional context, expressed in networks with a set of checks and balances and under the assumption of dyad relations between self-management and accountability, it could withdraw behind the curtains as a kind of great clockmaker. Our historical analysis has served to disentangle the premises about state-market relations. Stakeholders were supposed to serve as 'actors', not so much involved in Dutch VET to give voice to their stake, but as to act and interact collectively to produce the desired outcomes at either a strategic or an operational level; they were not to behave as an audience but as part of the troupe, taking co-responsibility for the troupe as a whole.

For the ROCs, the amalgamation and transformation of small-scale schools with general public services to large-scale institutions defining their own public political action radius has made them strong regional actors, taking increased responsibilities that proved, however, hard to handle. In the economic crisis period of reflection and greater cost-awareness, the concept of a market-driven VET system ('let 1000 flowers bloom') lost support, to be replaced by government interventions aiming to restrict ROCs' geographical room for manoeuvre, thus improving the macro-efficiency of the system as a whole.

Although suggested in the 'market metaphor', it proved to be an illusion that a school, an organisation designed to qualify young learners, would be capable of delivering tailor-made services to both industry and young and adult students at the same time and in a similar process. In fact, the increased relations between ROCs and local industry brought these differences into the open; they revealed the sensitivity of these relations for confusing roles ('are we addressed as co-producers for the public case or as a client?') and for hasty changes in policy fashions. The tragedy of this history lies in its open end; we can never answer the question whether relations and processes would have been sorted out had ROCs been given the time to overcome childhood diseases, and had incidents been seen as incidents, not as arguments for tightening the rules.

There is one constant factor, however: the primal focus on ROCs is public and social. Basically, ROCs are a vehicle for qualifying young people from whatever background. The rationale of the government to intervene was to widen this focus, often ending up with tightening the rules as soon as outcomes did not meet the expectations. Despite the constant evolution of the system, the shared responsibility of schools and industry for a national qualification framework and for maintaining national work-based learning infrastructures still forms the heart of the system.

Will the basic infrastructure hold in the future? After the economic crisis of 2009–2013, an update of the industrial governance of the relations between VET

and the economic system seems to be necessary, to overcome the deadlock between central steering and school autonomy in particular. The Action Programme 'Focus on Craftsmanship' is a clear correction along the lines of market creation in VET. Ever since, the Cabinet has proposed small-scale and more innovative school-business relations, particularly at the regional level. This can be understood as a new context for school-industry cooperation.

In 2015, the **Netherlands Association of VET Colleges** produced a manifesto 'MBO in 2025' (MBO Raad, 2015), *Middelbaar BeroepsOnderwijs*, MBO, is the Dutch name for VET, promoting more flexibility and innovation in the study routes through the VET system, underpinned by a broader knowledge basis to be acquired at the general secondary education level. With the public pressure felt especially by ROCs, leading to greater attention to school—and hence, student—performance, the manifesto expresses the need to bring labour market developments into the school to anticipate ongoing technological changes more directly, as opposed to channelling information through national frameworks. Apart from reconstructing secondary education, more open-ended school-industry relations are only possible when companies are willing to make new machinery and equipment accessible to work-based learning and to help ROCs upgrade their programmes. In other words, ROCs can only engage in innovative school-industry relations with the help from its friends in secondary education as well as in the industrial world.

It is still in the education programmes at the workplace and in the classroom where the two shall meet. But even then, modesty is required in analysing the aims and ambitions invested in the desired outcomes of all the programmes and the conditions to execute them. Analysing VET policies in England, Allen and Ainley (2014) conclude that since 1995 education has substituted for an economic strategy. Looking back, in the 1996–2015 period, the Dutch Ministry of Education acted on the belief that active regional economic strategies would be the pearl in the crown of school-industry relations.

As one thing is clear, it is rather hazardous to expect autonomous actors to act as one (in this case, the government) would like them to, even more so when expectations keep changing over time. In the increasingly aging, flexible, open and uncertain labour market of the future, ROCs once more will have to prove their added value to the labour market. This can only be done through direct communication between schools and industry, but even then a ROC is first of all a school and not a public instrument to solve industrial problems—not by nature or in its standard operation procedures. Creating high expectations might even bounce back as a growing number of companies, being disappointed by the performance of ROCs, seem willing to invest in firm-specific training independent of the VET system. Having said that, the current technology push will almost certainly lead to new demands and expectations about what ROCs have to deliver. Where in the past high expectations might have come from the government pushing ROCs to become relevant for the industry, the time might have come that ROCs find themselves pushed by the industry to be more relevant.

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# Chapter 5

## Improvement of Educational Quality in VET: Who Is Next?

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### 5.1 Introduction

Over the last decade of the twentieth century, we have seen a major shift in school governance in the Dutch VET sector. The autonomy of boards increased tremendously, the number of VET colleges decreased due to mergers and the ROCs have to operate in a more complex environment. One of the central assumptions in the tendency towards greater autonomy of schools is the notion that greater autonomy will lead to improved educational outcomes (see Honingh & Van Thiel, 2014; Karsten, 1999). Inspired by this tendency, Dutch national policy papers have explicitly emphasized the responsibility of school boards for educational quality. It has been argued in these papers that school boards are best placed and equipped to come up with improvements and to enhance the educational quality of their schools. In the Dutch VET sector, the creation of larger autonomous schools for secondary vocational education in the early 1990s was originally described as the vehicle to develop tailor-made courses, enhance educational quality and increase the policy-making scope of schools (Honingh & Karsten, 2007; Ministry of Education and Science, 1991).

Next to these ideas about educational quality, issues concerning school governance, the introduction of more market-oriented steering instruments, and the need to involve stakeholders and strengthen ties with the regional labour market have fed the idea to create large autonomous schools for secondary vocational education. In the new Adult and Vocational Education Act of 1996 (Staatsblad, 1995), the merger

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process was one of the key reforms. The number of senior secondary vocational schools fell from about 300 in 1986 to 70 in 2005. Currently, the Dutch VET sector consists of about 70 colleges, comprising general regional training centres (ROCs), agricultural training centres (AOCs) and specialized centres offering programmes at different levels and of different lengths. Given the scaling up of VET schools, the increased importance of boards, and the increased autonomy, the Dutch Educational Council (2006) affirmed the need for the increased professionalism of school boards and school management. Subsequently, the Dutch Education Council (2007) concluded that school autonomy and decentralization could only be a success if school boards improved the professional administration and governance of their schools. Here it is important to bear in mind that in the VET sector this process of decentralization has been perceived as one of regional centralization, due to the dramatic reduction in the number of VET colleges.

Consistent with the conclusion that the governance of schools needed to be strengthened, the Dutch Inspectorate of Education expected school boards to implement a quality assurance system to monitor and improve the quality of education in their schools (see Ehren & Honingh, 2012). As a consequence, considerably more detailed and complex reporting requirements for educational programmes, test results, curricula, organisational structure and quality assurance systems were imposed on schools (see also Biesta, 2008; Clarke & Winch, 2007). Yet despite this ongoing focus on performance and monitoring since the 1990s, the educational quality and quality assurance in the Dutch VET sector are still ongoing issues.

In 2010 a number of boards of regional training centres were found to be incapable of adequately addressing continuing problems with their quality assurance procedures. Moreover, a number of boards in the VET sector could not implement the national requirements concerning timetables (Inspectorate of Education, 2012). Additionally, the annual reports of a large number of regional training centres were considered to be of poor quality, as was their level of public accountability. These observations – which were consistent with those of previous years – led to a wider investigation of the functioning of boards in the Dutch VET sector (e.g., Commission Oudeman, 2010). Finally, in the 2013 annual report of the Dutch Inspectorate it was stated that almost 70% of the regional training centres perceived difficulties in meeting the quality assurance requirements (for instance, in completing the circle of the quality assurance system) (Inspectorate, 2013). Some improvements have been made, but these vary across and within regional training centres (IvhO/ Inspectorate of Education, 2013).

Perhaps the most vital question that came on the policy agenda was whether school boards are in control of the operations of the schools. In other words, can boards of regional training centres actually take responsibility for educational quality, and can the boards realize improvements in case of underperformance? The general assumption in today's educational policy, and in particular in the working methods of the Dutch Inspectorate of Education, is that if school boards are 'in control', schools will be able to find solutions for problems and to foster school improvement (IvhO, 2010a; Janssens & De Wolf, 2009). This assumption however

has no robust supporting empirical evidence, and it reveals a rather classic top-down perspective on educational governance and quality, relying heavily on formal quality assurance instruments whilst ignoring the complexity of multi-layered organisations, bottom-up processes and the perverse effects of performance measurement.

In this chapter we will illustrate and analyze the limitations of relying on top-down steering in VET schools having a multi-layered structure, dealing with a complex institutional environment and using fixed indicators to measure performances. In the final section of this chapter we will propose an alternative way to get a better understanding of the attempts that are made in schools to enhance educational quality and foster school improvement.

## 5.2 Inspectorate's Working Methods in the Dutch VET Sector

To answer the question of board control and the board's contribution to educational quality in schools for VET requires, first of all, a better understanding of the working methods of the Inspectorate. When it comes to educational quality, the Inspectorate's definition and interpretation of quality is extremely influential (e.g., Bronneman-Helmers, 2011). Although there is much criticism of the Inspectorate from VET schools, for instance for its focus on quantitative measures, school boards still attach great importance to the Inspectorate's judgement and seem to adjust their own ideas about quality to those of the Inspectorate. As such, the working methods of the Inspectorate and the detailed frameworks it uses to operationalize educational quality lead to strategic behaviour. In this section it becomes apparent that current working methods of the Inspectorate attach great importance to formal quality assurance systems and risk analyses.

In 2012, the Inspectorate of Education introduced a new Supervision Framework for the VET sector. Crucial elements of this Supervision Framework are: activating VET institutions, and proportionate inspection. Activating means that institutions in the VET sector are stimulated to take responsibility for the quality of their education, examinations, self-evaluations and operational management. The Inspectorate sees its own role as more complementary to the mechanisms and processes which school boards are required to implement to monitor and improve the education in their schools (e.g., Janssens & De Wolf, 2009). Specific programmes within VET institutions whose quality and quality assurance procedures are meeting the Inspectorate's requirements are rewarded by reducing their inspection burden. The Inspectorate monitors the key aspects annually and conducts a triennial institutional analysis in the VET sector (Inspectorate of Education, 2011). The 'on-paper' annual monitoring is meant to detect possible risks, by studying BRON data (i.e., a data set of all Dutch students in secondary vocational education), the integrated annual reports and specific performance indicators. The second element of this so-called

first-order supervision is an institutional analysis. Every 3 years, a detailed analysis is undertaken on-site at each institution, aimed at answering two key questions:

1. *What are the results of the VET institution based on certain indicators (the output, the satisfaction of students, staff and employees, the stability of the organisation and management, the quality of the education and exams, the financial continuity), do these indicators show possible risks for education quality and financial continuity, and if so, where do these risks lie?*
2. *What is the state of affairs of the quality assurance of the institution? The answers to both questions is the basis for a conclusion about the state of the institution, which conclusion the Inspectorate sets down in a report.*

Subsequently, the following question is answered: What follow-up actions are considered desirable, and who should take these actions? The Inspectorate discusses the report and the follow-up actions considered desirable with the executive VET board in an administrative meeting (Inspectorate of Education, 2011). The annual analysis of the accountability documents and other sources is generally ‘on-paper’, or in other words, at distance. An on-site quality assessment takes place on a small random sample of programmes at VET institutions (Inspectorate of Education, 2011, p. 15). All quality assessments of programmes in a particular year taken together constitute a system-wide survey. This assessment has three purposes: it is the basis for the annual report on the state of the VET sector, it is a reality check in education practice of the risk analysis, and simultaneously it is an assessment at the level of the institution as well. The rationale for including a wide variety of indicators can be found in the growing number of studies that link the governance and policy-making capacity of schools with students’ test scores and performances, in order to gauge the school’s quality (e.g., Timmermans, Bosker, Doolaard, & De Wolf, 2012). Here, it is important to mention that outcomes such as diplomas, credits or pass rates have to be used for making judgements and comparisons about performance, because there are no national examinations available in the Dutch VET sector.

The number of VET programmes considered ‘very weak’ has increased from 14 in 2011 to 25 in 2013 and 30 in 2014. The programmes in these VET schools are under intensified supervision from the Inspectorate (second-order supervision). They receive a warning directly from the Minister. After a specified period (usually a year) it is investigated whether there has been enough quality improvement. If the quality of education or examination is repeatedly found wanting, the institution may lose the right to provide the programme in question. The thirty ‘very weak’ programmes can be found in nine VET schools (see online MBO Newspaper, 4 July 2015).

If a VET institution is judged to have serious weaknesses in its programmes on several fronts or for a longer time, the Inspectorate will intensify the supervision of the entire institution alongside the already ongoing intensive supervision of programmes. In special cases, the Inspectorate may take the institution to task over the functioning of its internal supervision. A basic assumption underlying the inspection framework is: the more the institution is in control according to the first-order supervision, the more distance the Inspectorate may keep. The Inspectorate calls

this earned trust. This approach builds upon the idea that if the school board shows itself to be in control, the school will be able to find solutions for problems and to foster school improvement (Inspectorate of Education, 2010a; Janssens & De Wolf, 2009). In these ways, the inspection framework assumes a linkage between board control and school performance – including fostering school improvement and educational quality – although, as said before, scientific evidence is still lacking (Commission Oudeman, 2010; Inspectorate of Education, 2010b; Hooge, Nusink, & Van der Sluis, 2006; Van Esch & Teelken, 2008). Such a top-down, rational approach raises the question whether the Inspectorate’s judgements reflect the day-to-day activities that teachers, managers, middle managers and board members perform in order to guarantee and enhance educational quality. In other words, does the Inspectorate’s framework capture the actual behaviour and care that is given within the school organisation to enhance and guarantee educational quality? The relevance of this question becomes apparent in the next sections, which will reflect on the side effects of performance measurement, the multi-layered nature of schools in the VET sector, and their environment.

### 5.3 Reflecting on Performance Measurements

Over the last two decades the use of quality assurance instruments is considered one of the key factors in controlling, steering and improving educational quality of Dutch vocational education (Janssens & De Wolf, 2009; Ranson, 2003). However, these instruments often lead to unintended consequences (Van Thiel & Leeuw, 2002). Here, different types of unintended consequences can be distinguished: i) an increase of monitoring costs; ii) dysfunctional effects such as ossification, a lack of innovation, tunnel vision and suboptimal reporting; iii) symbolic behaviour such as ritualism; and iv) teaching to the test ( Braithwaite, Makkai, & Braithwaite, 2007; Power, 1997; Van Thiel & Leeuw, 2002; De Wolf & Janssens, 2007). These consequences lead to a performance paradox, that is, a weak correlation between performance indicators and performance itself (Meyer & Gupta, 1994; Van Thiel & Leeuw, 2002). The emergence of this performance paradox is even more likely in the educational sector, where students participate in the service delivery process and the ‘products’ are intangible. As a consequence, students affect output and outcome and performance in ways that are difficult to appraise with ‘hard’ measures (Fountain, 2001; Van Thiel & Leeuw, 2002).

Nevertheless, within the educational system a move towards a more test-based accountability system can be observed. Evidence from the U.S., where test-based accountability is dominant, points to strategic behaviour of schools related to measures of student achievements. Koretz (2002) describes different types of undesirable test preparation where schools take classroom time away from important aspects of the curriculum that are not represented in the test (e.g., because they are difficult to assess in a multiple choice test format). If instruction is focused on incidental features and test elements, learning about them does not produce real

improvements in students' knowledge of a certain subject. This kind of test preparation, therefore, leads to increased test scores that neither generalize to a second test, nor represent meaningful increases in students' knowledge of a certain domain (test inflation) (Koretz, 2002).

In the VET sector, we see problems with test preparation which is especially problematic where obligatory language and arithmetic tests are concerned. Moreover, in the VET sector educational quality involves practical activities that are usually related to a specific trade or practice, and this type of quality is extremely difficult to measure, in particular with fixed instruments. In fact, the quality of educational programmes becomes apparent as soon as the students enter the labour market. Do graduated students find jobs? And more importantly, are they skilled? Or in other words, are their skills and knowledge up to date, and do their capacities align with the skills that are needed and asked for on the labour market?

Although the use of measurement instruments might offer middle managers, quality assurance managers and board members in the VET institutions factual data about learning results, this does not mean that they are 'in control'. Instead, these data about learning results, which are limited in scope, lead to a false sense of control, since middle managers, quality assurance managers and board members often lack a full understanding of the meaning of these data, including their inadequacies. In other words, having factual data does not necessarily mean that one is in control and able to cope with the underlying processes. Moreover, leaning heavily on the outcomes of quality assurance instruments and performance measurements brings with it the risk of losing attention for day-to-day efforts to improve the educational quality (Petit, Van Esch, Van de Venne, & Groenenberg, 2012; Van de Venne & Petit, 2010). As such, one could doubt whether the data are used adequately.

In an international case study in the VET sector, Visscher and Hendriks (2009) failed to find evidence for the assumption that the use of quality assurance data implies that problems in institutional functioning are detected, diagnosed and solved, and that this in turn leads to a higher quality of instructional processes, which in turn will improve student achievements. Improved student performance was seldom observed in their case studies. In fact, these findings raise two questions. The first one is whether the data are used adequately. The second is a 'What if' question. What if the data had been used adequately – would that have improved student achievements? Visscher and Hendriks describe that the VET providers, in general, only seldom focus on quality assurance and hardly use data about detected and diagnosed problems when trying to increase their 'production'. As such, they don't use the full potential of collected data. The second question about the potential of the instruments and collected data to enhance student achievements remains unanswered.

Simons (2001) explains the popularity of quality assurance in education by linking intra-school developments to broader political and governmental strategies. He argues that despite its connotation, quality is not 'neutral' or value free. A fundamental problem with defining and designing quality assurance instruments is that one has to work with standards that are 'fixed' in advance (Simons, 2001). As organisations

tend to emphasize the elements which are assessed by the quality assurance instruments, the use of pre-specified instruments tends to dictate the educational content of programmes, and it then becomes even more important to examine whether in such a context school boards tend to feel restricted and less capable of influencing the educational quality. In the next section, we elaborate on what boards perceive as the barriers to enhancing educational quality.

#### **5.4 Boards' Steering Capacity in a Multi-layered Organisation**

What do we know about the effects that school boards have on quality of education? In trying to understand the effectiveness of school boards, a range of literature is available. Research on school effectiveness traditionally focuses on studying the determinants of student achievements such as teacher professionalism, teaching methods, parental involvement, school organisation, school leader qualities and school size (e.g., Hallinger, 1989; Ten Bruggencate, 2009; Timmermans et al., 2012). For some time now, school boards and school governance have been added to these causal conceptual models and receive more attention in school effectiveness studies (e.g., Land, 2002). However, this has often resulted in conceptual models which are too complex to be really useful. Saatcioglu, Moore, Sargut, & Bajaj, (2012) address the multi-layered nature of school organisations and illustrate how the impact of school boards' policies, decisions and activities 'trickle down' to the classroom level, ultimately impacting on the interaction between teachers and students. In the VET sector both the scale of schools and their structure make this process of board influence 'trickling down' to the classroom longer and harder. The distance between the board room and classroom is greater and less direct, due to management layers. Take for instance the team leaders, school managers, sector managers and support staff who can adjust or change board plans. Hooge (2013), reflecting on Dutch schools in general, states that there is a kind of a myth of school board control in today's educational policy. In policy documents and policy letters it is argued that the school board is responsible for the educational quality, although it is known to be extremely difficult to manage and control educational quality. This explains why there is a strong debate in research and theory these days about notions of shared and distributed leadership (Geijsel, 2015).

In recent years, Dutch school boards especially in VET education are more aware of the educational quality of their school (see Thomsen & Van de Venne, 2012). But they still have to ask whether, and how, board behaviour enhances educational quality, which specific approaches are successful and which are not. Therefore, it is important first of all to reflect on the means school boards have to contribute to the quality of educational processes. For example, we already discussed some of the possible effects of a board decision to implement quality assurance instruments. And secondly, we need to discuss the degrees of freedom that a board in a VET

college has, given its complex institutional environment and the diverse expectations of their stakeholders. We will discuss this later in the chapter.

To complicate matters further, it is not only the capacities and willingness of boards, teachers and students that affect educational quality. Educational quality also depends on the organisational structure of schools, the alignment of departments, and how much autonomy teams of teachers perceive. We will elaborate on this in the next section.

## 5.5 The Organisational Structure of Schools in the VET Sector

Most of the regional training centres provide education in three sectors: engineering and technology, economics, and health and social care. Within each sector there are several content-based clusters of educational programmes. Each cluster consists of programmes at different levels and of different lengths (e.g., Timmermans et al., 2012). The educational profiles of regional training centres are very diverse. Small, specialized regional training centres provide training programmes from only a few clusters, whereas some large regional training centres provide programmes from 14 clusters. On average, regional training centres have about 7450 students (MBO-Raad, 2014).

When looking at the intra-school organisation of regional training centres, we distinguish several subsystems, for example the subsystem of learning that exists of teachers and students, the supporting system that exists of support staff, and the management system that consists of middle managers and board members (e.g., Weick, 1976; see also Hanson, 2001). A central idea in institutional theory is that changes in structures and procedures may be decoupled from classroom instruction. Since the 1970s researchers have argued that schools often respond to pressures from their institutional environment by making symbolic changes. In other words, structures and procedures that are changed by the board and management layer or support staff do not necessarily affect classroom practices. Due to decoupling, the classroom is buffered from changes in the other subsystems (e.g., Meyer & Rowan, 2006). Take for example the up-scaling and increase of school autonomy in the 1990s. Both reforms led to dramatic changes in the organisational structure of schools, but there is hardly any evidence that these changes caused changes in classroom practices (e.g., Karsten, 1999) and as such contributed to education of a better quality. Moreover, we can doubt whether the autonomy of teachers has really increased as a consequence of the creation of large ROCs.

This idea has some implications for how teachers' agency and autonomy are conceptualized. From an individual perspective, teachers may be portrayed as having a high degree of control in making decisions about classroom practices. But from an institutional perspective, teachers may be portrayed as actors whose behaviour is shaped by the institutional environment (see Powell & Dimaggio, 1991).



By reflecting on these perspectives, and by considering the extent to which schools could be seen as loosely coupled organisations, Coburn (2004) suggests that teachers have a bounded autonomy: their decision making and acting are guided by a combination of deep-seated assumptions about teaching and learning and broader movements in the environment. In daily practice this implies that regulative structures place technical limits on decision making, creating pressures and priorities that teachers feel they must respond to in some way. At the same time, the preexisting regularities which teachers have developed over time will constitute a strong framework into which they tend to 'fit' new approaches and ideas (Coburn, 2004). We conclude from this analysis that the idea of decoupling in schools is too simple and too static; there is a complex dynamic between teachers, the institutional environment and other organisational members and subsystems within the school. This idea of interaction is also described by Hanson (2001) who, relying on the notion of a professional bureaucracy (Mintzberg, 1979), developed the interacting spheres model (ISM). In a professional bureaucracy, the nature of the primary processes (here: teaching) dominates the secondary processes (here, the supportive staff and management). This dominance of the primary processes causes difficulties for the other organisational members who wish to influence the primary processes.

Over the last decade and a half, the position of (middle) managers in regional training centres has been strengthened, and at the same time teams have more responsibility for their outcomes and are expected to manage themselves to a certain extent. Because of this wider distribution of responsibilities, the demarcation between managerial authority and classroom practice has to be redefined. In many regional training centres nowadays, teams of teachers working in the same cluster are responsible for their own outcomes (read: their students' performances). More autonomy has been assigned to these 'outcome-responsible teams', because it is argued that they are able to take contingencies into account and adjust their working methods if needed. Moreover, it is argued that making teams responsible will stimulate them to reflect on their own behaviour, attitudes and classroom practices. Whether teams are able to do so, varies between teams and departments (Van de Venne, Hermanussen, Honingh, & Van Genugten, 2014).

This way of distributing responsibilities requires a different way of cooperation between teams, team leaders, middle managers, cluster directors, sector directors and board members. The boards for instance should now facilitate organisational members to develop and stimulate a professional culture. In some of the schools for VET this seems to be common practice, while in other schools this was still just an idea. In educational literature the idea of facilitating organisational members to develop and simulate a professional culture is often referred to as educational leadership (Bryk & Driscoll, 1985; Newmann, King, & Rigdon, 1996). A Dutch policy report, based on a review of former reports, studies and interviews and discussions with stakeholders in the VET sector (Commission Oudeman, 2010), concluded that there is a need for leaders who are inspiring, give autonomy to employees, listen to criticism, protect their employees if necessary, and are empathic and able to listen. The authors of this report recommend decreasing the distance between managers and teachers (workforce), stimulating critical dialogues between different layers

and subsystems in the school organisation, and cooperating with other schools (see also Dutch Council of Education, 2013). It seems that the introduction of outcome-responsible teams and the less hierarchical organisation structure within regional training centres fit these recommendations (see also Honingh & Karstanje, 2007).

When more responsibility is assigned to lower organisational levels, the classic steering model – the top-down model – is no longer dominant. A new dynamic and a new way of coordination between the organisational layers are needed, facilitating bottom-up processes and stimulating dialogues about what educational quality means and how to improve it. Notions like these, about shifting responsibilities to the team level and the new dynamics which this facilitates between teachers, teams and managers, add to the body of knowledge about the importance of intra-organisational dynamics for intra-organisational development and school improvement. In the context of outcome-responsible teams, of which there are more and more in VET in the Netherlands (Stichting Kennisnet, 2013), the question whether a board is in control or not may lose some of its relevance. In the next section, we illustrate how stakeholder involvement effects the possibilities of top-down steering versus bottom-up strategies in schools in the VET sector.

### ***5.5.1 The School Environment***

VET schools have a complex institutional environment, operating in an arena full of diverse stakeholders (for instance small, middle-sized and large companies of different types, different local governments and the central government), in which all stakeholder have their own expectations. Although all stakeholders recognize the importance of the first goal of VET: ‘providing education that meets the demands of the labour market’, stakeholders do value distinctive aspects of education differently (e.g., Van der Sluis, Reezigt, & Borgans, 2013). Therefore it is important that boards gather knowledge about the preferences of their stakeholders. Knowing about these preferences helps middle managers and team leaders to reflect on the curriculum, specifically the extent to which it addresses aspects valued by stakeholders. In the context of stakeholder influence, it should be noted that the Inspectorate is considered as one of the most important stakeholders. The influence of the Inspectorate is implemented partly by its working methods and the detailed frameworks it uses to operationalize educational quality. With these means the Inspectorate makes clear what it considers as educational quality. For schools in the VET sector, the Inspectorate’s judgements carry great weight, and thus they will make sure that their scores on the Inspectorate’s indicators are at least up to par. In fact, this is a classic example of indicator fixation that may lead to tunnel vision with regard to educational quality. It also leads to VET boards complaining about their limited autonomy when it comes to developing ideas about educational quality. They feel they have to focus on fixed indicators, while these do not offer them the input they need to bring about changes in order to enhance educational quality (Van de Venne et al., 2014).

## 5.6 Towards Soft Control

The aforementioned observations show that assumptions about VET boards having the capacity to control educational quality and effect improvement are debatable. Summarizing our arguments, we first discussed how side effects of performance measurement may put school improvement at risk. Second, we noticed that the control of school boards is limited. Third, we illustrated that the intra-school structure conflicts with the notion of top-down steering. And fourth, we noted that there is an imbalance in defining and measuring educational quality: the Inspectorate's ideas about quality prevail over the ideas of other stakeholders, and also over the ideas of the VET boards.

When VET boards aim to foster educational quality, will hierarchic top-down steering based on command and control give the best results? A culture in which teachers and managers are stimulated to take responsibility might result in greater and more lasting improvements (e.g., Daly & Finnigan, 2010; Spillane & Seashore Louis, 2002). Such a culture may be created if teachers and managers are willing to operate as a team: to share information and knowledge, openly discuss issues, help each other, formulate a shared mission, and take responsibility for their individual and the teams' behaviour. Indeed, studies in schools for primary and secondary education and VET have shown that factors such as sharing information, social trust and ties within the school organisation are crucial in improving school performances (Daly & Finnigan, 2010; Hofman, Hofman, Gray, & Daly, 2004; Petit et al., 2012; Spillane & Seashore Louis, 2002; Van de Venne & Petit, 2010; ). These findings illustrate the importance of organisational climate and culture for the willingness to learn and to enhance organisational performances. Moreover, these findings suggest that instruments for quality assurance, when divorced from a culture of trust and cooperation, can make at most a modest contribution to educational improvement; the assumption that quality assurance will stimulate ongoing quality improvement seems questionable (see also Simons, 2001).

Beyond doubt, today's measurement culture and consequent focus on measurable quality in education has a profound impact on educational practices in VET, on school organisations and on concepts of good quality of education. When one uses indicator-type data about schools, even conceding that these data are not value free, it becomes possible to compare VET schools, their working methods and results (Petit et al., 2012). School boards may use such indicator reports to get an overview of performances and students' results, and it strengthens their idea of control. The problem is, however, that one may get the false impression that this type of information is sufficient on which to base decisions about education, school organisations, didactics, etc. It is important to realize that these data always need context and interpretation.

Considering the perverse effects of performance measurement described above (e.g., Van Thiel & Leeuw, 2002), as well as how difficult it is to formulate educational quality clearly and consensually, we need to find alternative ways to stimulate teachers, managers and others involved in educational processes to offer education of good quality. To prevent unintended consequences it is important to align checklist

measurement with the observation of actual behaviour. Organisational members are in the best position to make relevant observations. Taking this line of reasoning a step further, one has to facilitate the commitment and willingness of organisational members to provide education of good quality, to come up with solutions for problems and to take responsibility for their behaviour. This requires on the one hand shared ideas about the core activities of the school, and on the other hand a culture that supports the organisational members in bringing their ideas to life. Reflecting on what can be seen as good education, Biesta (2008) states that it is important to be explicit about the ideas stakeholders have about good education, since schools otherwise run the risk that, lacking clear ideas, statistics will take their place when decisions are made. First of all, this suggests that teachers, stakeholders, managers and board members should discuss regularly the ideas about ends, aims and means, and about good education in VET. Responsibility for education should be taken on actively and across several organisational layers. Second, this is another warning against the indiscriminate use of performance measurements: such data, as presented in quality assurance reports, cannot be read and understood in isolation; the numbers and figures need a conceptual and qualitative background.

An interesting concept in this regard is that of *'soft control'*. This concept refers to aspects of organisational culture and behaviour of employees to indicate whether they are committed and take their responsibility for organisations' performance. It has already been found that when examining whether teams take responsibility and more generally organisations are willing to improve, it is useful to analyze informal processes of motivation, loyalty, integrity, inspiration and norms and values of professionals (De Heus & Stremmelaar, 2000). These processes are combined in the concept of *'soft control'* and contrast with direct output indicators (*'hard control'*). This concept of *'soft control'* takes the contributions of individual organisational members or teams into account which are valuable for organisational success (called, in this chapter, education of good quality). The concept of *'soft control'* has been specified, using culture analysis, in Kaptein's (2007) model of ethical organisation culture. This model consists of seven dimensions (Table 5.1).

From the perspective of *'soft control'* it is desirable that in VET schools middle managers, team leaders, teachers and stakeholders are involved in interpreting and discussing the outcomes of educational processes, together with policy makers and decision makers. Questions to focus on are, for example: What is to be learned from good versus disappointing outcomes? What factors might have led to certain outcomes? Are contextual factors taken into account? Is the school culture open and stimulating in that teachers and managers are willing to reflect on their work and to improve? When teachers, team leaders and middle managers have been assigned and are taking responsibility, the school boards may be considered to be in control, be it in a different manner, not top-down, but in soft control. We observe a growing awareness in VET schools of the importance of both *'soft'* and *'hard control'*.

Finally, we emphasize that education is a relational good. The quality of educational processes depends in large part on the interactions between students and teachers. Therefore, it is crucial to involve teachers actively in discussing data about student performances. And in VET schools, the stakeholders in the environment

**Table 5.1** Seven dimensions of ‘soft control’ based on Kaptein (2007) and Lückcrath-Rovers (2011)

Clarity	Clarity of normative expectations regarding conduct of employees/professionals
Congruency of supervisors and management	The moral requirement that supervisors and managers should visibly act in accordance with normative expectations
Feasibility	The extent to which the organisation creates conditions which enable employees to comply with normative expectations
Supportability	The extent to which the organisation creates support among employees to meet normative expectations
Transparency	The degree to which employee conduct and its consequences are perceptible to those who can act upon it, i.e., colleagues, supervisor, subordinates and the employee(s) concerned
Discussability	The opportunity employees have to raise and discuss ethical issues
Sanctionability	The likelihood of employees being punished for behaving unethically and rewarded for behaving ethically

should be involved in these discussions as well, because their perspective mirrors the requirements of the labour market. In other words, given the responsibility of teachers in educational processes, their interaction with stakeholders, and the scale of regional training centres, it is not realistic and not desirable to try to control educational quality and implement quality assurance on the basis of fixed measurement instruments; these can make at most a modest contribution.

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# Chapter 6

## Professional Development of Teachers in Vocational Education

Marcel van der Klink and Jan Streumer

### 6.1 Introduction

Despite the acknowledgement of the significance of teachers as the ultimate cornerstone for safeguarding and improving the quality of education (Hattie, 2009), their professional development, however, seems to be a topic that has not gained overwhelming attention by the policy, practice and the research community. Nevertheless, over the past decade it is increasingly recognized that vocational education will only remain attractive, relevant and future-proof if teachers are fully dedicated and prepared to work continuously on the renewal of their teaching. In this context teachers' professional development is frequently emphasized as an important prerequisite for sustainability and successful innovations in education (OECD, 2005).

Characteristic of vocational education in the Netherlands is its inclusion in the regular education system and the existence of separate legislations for the various types of vocational education. Vocational education in the Netherlands comprises of different types of education, in this chapter restricted to:

- Regional colleges (in Dutch: MBO – middelbaar beroepsonderwijs), which is regulated by the General Adult Education and Vocational Education Act, which has taken effect in 1996 (amendments added later);

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- Higher professional education (in Dutch: HBO – hoger beroepsonderwijs): the Higher Education and Scientific Research Act, dating back to 1993 (amendments added later).

When we refer to both types we will use the term ‘vocational education’ for reasons of convenience. A broad definition of professional development forms the starting point for this chapter. Professional development comprises pre-service teacher education and lifelong learning after graduation. In professional development, however, there is no fixed route to be followed, nor is there an end to the development as long as teachers work in their profession (Smith, 2003). Professional development comprises a broad range of different kinds of learning activities, ranging from formal organised learning, such as workshops, courses, master’s programs and PhD tracks, to informal learning activities that are embedded in the workplace. These informal learning activities differ in the degree in which they are planned, organised and labeled as learning (Tynjala, 2008). Some types of informal learning are rather tangible and intentional, e.g. job rotation, mentoring and participation in learning projects (Streumer and Kho, 2006), but the majority of the informal learning experiences is by nature rather haphazard and incidental (Marsick, 2006) and may be rather implicit and not easily recognized as learning per se, since informal learning often occurs as a side-effect of other activities in the workplace (Marsick, 2009).

This chapter commences with discussing professional development from a national perspective by addressing how legal acts, policies, teacher education programs and other initiatives shape professional development (Sect. 6.2). Next, the trends in society and the response of vocational education to these changes, including aspects related to teachers’ professional development will be discussed (Sect. 6.3). Subsequently, the focus will shift to the features of the teacher workforce in vocational education and their implications for professional development (Sect. 6.4). Section 6.5 considers the question what do teachers actually do with regard to their professional development? The chapter ends with concluding remarks in the final section.

## 6.2 Professional Development from the Perspective of National Policies and Legislation

No specialized teacher education tracks exist that educate exclusively for a teaching career in vocational education. For secondary education (including pre-vocational education and regional colleges) two forms of teaching certificates do exist:

- lower secondary certificate (bachelor level): this so called ‘grade two’ qualification qualifies teachers for the first 3 years of secondary general education, for pre-vocational education and for regional colleges.
- full certificate (master level): this ‘grade one’ qualification qualifies teachers for all levels of secondary education.

Except for the general subjects and some vocational subjects there is no provision in teacher education for teaching in vocational education. There are teaching programs preparing teachers in a broad range of general subjects, such as exact sciences (mathematics, chemistry, physics, biology) languages (e.g. Dutch, French, German, English, Spanish), arts (e.g. textile, drawing), sports, geography, history, religion, economics, home economics, personal interaction skills. There are also a limited number of bachelor level teaching programs for specialized vocational subjects, such as technical subjects (e.g. building construction, car mechanics, electro-technology, electrical equipment technology), nursing and care. However, most teachers in vocational education teach vocational subjects for which no, regular, initial teacher education programs exist. Until quite recently, the prevailing national policy of the Ministry of Education has been that the lower secondary certificate for general subjects prepares students sufficiently for a teaching career at regional colleges. With regard to preparing teachers for teaching jobs in higher vocational education, the national policy emphasises the self-responsibility of which entails that legal regulations for teachers are reduced to a bare minimum. Therefore, to put it succinctly: no teaching programs that fully prepare teachers for a teaching career in vocational education exist at the moment.

Against the background of the lack of specialized teacher education programs, there is an ongoing, vivid debate on whether the current teacher education programs for general subjects prepare student teachers sufficiently for teaching careers at the regional colleges. For example, a scientific study conducted by ICLON, a teacher education institute, underscored differences between the generic types of secondary education and regional colleges (Van der Rijst, Van Duijn, & Nedermeijer, 2011):

- In secondary education the curriculum is organised in conventional disciplines, whereas in the regional colleges the curriculum is much more organised around occupational subjects that are taught in a practice-based manner.
- In regional colleges a learner-centred approach is applied much more, rather than a classroom-based approach. Teachers at regional colleges develop ‘customized programs’ for individual students.
- In regional colleges, the teacher is much more a team player who coordinates teaching and learning activities with his fellow teachers and professionals in the field.

So far, the Ministry of Education has not demonstrated considerable willingness to improve the preparation for teaching at regional colleges, but recently a policy was launched that allows for specialized tracks within the existing teacher education programs for general subjects that educate for the secondary grade. This shift in policy reflects an acknowledgement by the Ministry of Education that teachers that opt for a career at the regional colleges need to be better prepared. The policy entails, among other things, that students in their final (fourth) year can attend a separate vocational education track as a major of 60 ECTS that includes theoretical as well as pedagogical and didactical components, and a practicum at a regional college (Ministry of Education, 2012). The first student cohort to attend this specialized track will graduate in 2016.

	<b>Regional Colleges</b>	<b>Higher Professional Education</b>
<i>Minimal entry-level requirements</i>	Bachelor's degree in higher education	Bachelor's degree in higher education
<i>Additional requirements for permanent job contract</i>	Participation in training scheme that offers basic pedagogical and instructional competencies for teachers without a teaching certificate	Participation in training scheme (BKO) that offers basic pedagogical and instructional competencies. A master's degree is essential for receiving a permanent job contract
<i>Requirements for the entire teaching career</i>	10% of the working hours need to be dedicated to professional development activities	A considerable number of hours need to be reserved for participation in formal and informal learning activities  In some cases, attending a PhD program is facilitated since 10% of the permanent teaching staff needs to possess a PhD degree

**Fig. 6.1** Requirements for teaching in vocational education

The Ministry of Education foresees a shortage of teachers at the regional colleges that cannot be alleviated by the current influx in teacher education. Consequently, the higher education institutes are encouraged to include in their bachelor programs of rather different vocations and professions an optional course of 30 ECTS for students that consider a career in teaching at the regional colleges (Nieuwsbrief Leraren en Beroepsonderwijs, 2013). These optional courses (In Dutch called *Educatieve Minors*) consist of various pedagogical subjects combined with a practicum at a regional college. If students, after completing this optional course and their entire bachelor, decide to enrol at a secondary grade teacher education program, they will be admitted to a shortened version of the program.

These recent initiatives that were launched by the Ministry of Education, however, did not end the debate on how to prepare new teachers for teaching at regional colleges. The debate was rekindled by shifting viewpoints of influential stakeholders, such as the Education Council that now adheres to the view that 4-year teacher education programs entirely focused on preparing student teachers for teaching in regional colleges are still the best solution.

Though there is a vivid debate on the preparation of teachers for regional colleges through specialized training tracks and ways to increase the number of students that opt for a teaching career in regional colleges, the majority of teachers in vocational education do not possess any teaching certificate. This applies both to teachers employed at regional colleges as well as teachers working in higher professional education. Figure 6.1 represents the main requirements for teaching in vocational education.

As will be further outlined in Sect. 6.4, the majority of the teachers employed in vocational education can be characterized as career switchers for whom teaching is a second career following a career in the vocation or profession they are now educating for. To be eligible for teaching in vocational education it is sufficient that the candidate possesses a bachelor's degree. For example, at the moment three quarters of teachers employed at the regional colleges possess a bachelor's degree earned in higher professional education, whereas only 13% have attended an academic pro-

gram. In higher professional education too the majority of the teachers hold a bachelor's degree, but despite a lack of accurate figure on this topic, the percentage of teachers with an academic degree is likely to be higher.

For teachers in regional colleges and higher professional education additional requirements exist that are conditional for receiving a permanent job contract. Teachers without a teaching certificate that are employed at regional colleges are required to attend a training scheme that provides them with the basic teaching competencies. They are obliged to obtain this additional certificate within 2 years after their appointment as temporary teacher. It is the responsibility of the local regional colleges to ensure their teachers receive additional training in educational subjects and this has resulted into a range of training programs that are slightly different in content and quality (Ministry of Education, 2012). The Ministry have asked the regional colleges to intensify their cooperation with institutes for teacher education to ensure a minimum quality level of the training programs for starting teachers at regional colleges. The same applies to new teachers employed at institutes for higher professional education, but institutes in this sector are now beginning to collaborate on unifying the content and quality of the programs to ensure a minimum level is achieved irrespective of the institute the individual teacher is employed at.

There are additional requirements for the continuous professional development of teachers. The Professions in Education Act (In Dutch: Wet BIO) applies to teachers in different kinds of teaching sectors, including the regional colleges. This act emphasizes that being qualified once is not sufficient to perform as a professional teacher throughout the whole teaching career. Teachers are expected to invest 10% of their working hours in their own professional development. Schools are expected to create the appropriate conditions which allow teachers to meet this requirement (Van Cooten & Van Bergen, 2009).

Unlike regional colleges, in higher professional education the professional development of teachers is not regulated by legal acts. In this sector the professional development is a matter that is included in the yearly collective labor agreement, in which the boards of the institutes for higher professional education and the unions jointly decide upon various kinds of arrangements for personnel, such as salary, career paths, working conditions, and professional development. Currently the collective arrangement prescribes that teachers receive at least 40 h annually for participation in professional development activities.

In addition to the abovementioned legislation and labour agreements, the Ministry of Education encourages the professional development by a number of initiatives, for instance, the scholarship voucher for teachers, which is awarded irrespective of the school sector teachers are employed in. In 2008, it was decided to implement a bursary system that offers teachers a one-time scholarship (voucher) to attend a formal professional development trajectory, such as a master's program. The Ministry of Education (2011) reported that 2410 teachers received a voucher. However, the added value of the vouchers seems questionable since 'out of every ten vouchers, one is used for schooling that would not have taken place without such a voucher' (Van der Steeg, Van Elk, & Webbink, 2010, p. 3).

### 6.3 Professional Development from the Perspective of Regional Colleges and Institutes for Higher Professional Education

Vocational education faced many changes over the past years that directly or indirectly impacted the professional development of its teachers. These changes were largely triggered by the (policy) context of education and the social-cultural trends in society and are presented in a condensed manner in Fig. 6.2 (which is mainly based on: De Beer (2007) and HBO-raad (2009)).

It goes without saying that together these developments have a considerable impact on what is expected from teachers in vocational education, including consequences for their professional development. There is an ongoing debate on the quality of vocational education, and, as a consequence, this sector is under severe pressure (HBO Raad, 2009). Professional development of teachers is seen as one of the most essential means to improve the quality and image of education (Van Veen, Zwart, Meirink, & Verloop, 2010), since the quality of an education system depends largely on the quality of its teachers (George & Sabapathy, 2011). Drawing on the work of other scholars, McDaniel (2010) estimated that about 67% of student performance is

Developments	Explanation	Consequences for teachers
Changes in student population	The student population became more diverse, e.g. the number of students with a different ethnic background grew markedly. Many students encounter problems and the risk of drop-out increased and subsequently they need additional care to be successful in their educational career.	Teachers often lack (sufficient) knowledge and skills. Teachers are expected to deliver student-centred, customized training addressing the specific needs and characteristics of their students. New instructional strategies are introduced in which the individual students and their learning processes are placed at the forefront.
Intensification	Intensification refers to the increased speed and pressure of work and time in daily life. Bigger emphasis has been placed on educational effectiveness and efficiency. Supply-driven policy was exchanged for demand-driven policy and a business-like educational process in schools, in which achievement, testing, and statistical accounting have taken a prominent place.	Teachers felt they were downgraded to the executors of education policy that was devised by their own school board or imposed by the Ministry of Education. As a result, teachers felt their autonomy and professionalism were respected less and they are trying to claim a stronger position that is more in accordance with their status as professionals.
Informalization	Through informalization, power relations became more equal and manners more relaxed. This meant for the educational context that students (and parents) no longer automatically accepted the formal authority that society has assigned to school boards and teachers, but that authority constantly has to be earned again.	For teachers this results often into stressful work situations in which they are predominantly focused on their pedagogical role (classroom management, disciplining students) rather than being engaged in their role of lecturing and facilitating the acquisition of knowledge and skills.
The impact of ICT	The use of ICT has boomed in the last two decades and changed the world enormously. For vocational education it becomes increasingly crucial to link up with labour market demands and students' expectations with respect to the use of IT.	Teachers need to use ICT in such a way that it increases the quality of their teaching. ICT also seems to be supporting their own professional development, for establishing networks of teachers for exchanging and co-creation processes, and for easy access to learning materials in a Wikipedia-like manner.

Fig. 6.2 Major developments in society and their impact on teachers in vocational education



attributable to the quality of individual teachers, and, therefore, their qualifications, competencies, attitudes towards the teaching profession, and motivation for working as a teacher matter (George & Sabapathy, 2011). Although there is considerable agreement upon the importance of the quality of the teachers as a major condition for delivering quality education resulting into high levels of student performance, McDaniel (2007) concluded that the teaching staff has been grossly neglected. Currently there is, however, increasing attention for teachers' professional development, although coherent human resource policies seem lacking in vocational education so far. Nevertheless, there are some signs that point to a more prominent position for professional development on the agenda of vocational education schools (Runhaar, Sanders, & Van de Venne, 2012). These signs will be presented hereafter for higher professional education and the regional colleges separately.

The current countrywide collective labour agreement, that was agreed upon in 2012 by the unions and the employers of higher professional education institutes, emphasizes, among other things, the need for a professional culture in which teachers are intrinsically motivated for their work, collaborate in teams to deliver high quality education and feel ownership for their own professional development (Vereniging voor Hogescholen, 2013).

As a consequence of this collective agreement, every institute for higher professional education has developed and implemented a professional development plan. In this plan the institute unfolds the priorities, over a time horizon of 4 years, concerning the professional development of its staff. This plan must align with the strategy of the institute, which will address, among other issues, how the institute will achieve the performance agreements the institute has agreed upon with the Ministry of Education. The plan needs to reflect the most important professional development issues of the institute and how the human resources policy will contribute to the future performance of the institute.

Each institute spends at least 6% of the total annual budget on professional development, half of which consists of hours the employee is entitled to and the other half of out of pocket expenses (such as course fee, traveling and lodging costs).

The employee is entitled to dedicate a minimum of 40 h to professional development on an annual basis, the employer is required to ensure that the employee is exempted for those hours. Activities that are part of the professional development plan will be facilitated up to 75% of the official study time by the employer, other activities that are not part of the professional development plan for 25%. Professional development activities on behalf of the employer, which the employee in principle cannot refuse, will be facilitated 100% in time and financial costs and reimbursed by the employer.

In November 2011, the MBO Council and the Ministry of Education signed the Governance Agreement for the years 2011–2015. Part of that agreement was The Action Plan Teacher 2020 that focuses on the improvement of teachers at regional colleges. The agreement also comprised a Professional Statute, a binding agreement that describes the teaching competencies, requirements and the responsibility of teams for the delivery of high quality education. In regional colleges teams are, among other things, responsible for the educational process and determine the peda-

gical and didactical approach and teaching methods in consultation with the institutions they work for. With regard to the investments in professional development the agreement announced that teachers are entitled to 59 h of professional development annually under the condition that they agree on their professional activities with the employer. In addition, 107 training hours are available per fulltime teacher per team. The team determines the content and distribution of hours among the team members, after consultation with the employer.

The Governance Agreement also prescribes that regional colleges are obliged to compose a professional development plan regarding the further development of their teachers and other staff members. In 2012 and 2013, the regional colleges collectively received 12 million euro in funding from the Ministry of Education for their professional development activities on the condition that they would cooperate in a process of reviewing and adjusting their professional development plans.

There is a trend towards increasing investment in human resources by higher professional education and regional colleges. The introduction of Human Resource Management policies that emphasize the necessity for an integrated personnel policy has become commonplace. However, thus far these investments have not yet produced the intended results (Inspectie van het Onderwijs, 2010). The HRM policy in general (Runhaar & Sanders, 2007) and the professional development policy in particular (Teurlings & Uerz, 2009) are insufficiently connected to the needs of teachers. In their attempts to compose professional development plans, HR officers and managers of regional colleges encounter resistance from teachers because they do not recognize the need and value of such a policy (Runhaar & Sanders, 2007). There are at least two reasons for the teachers' resistance against HRM policies. First, since HRM is a novelty, there is confusion about the position and function of HRM (Oosterhof & Streefland, 2011). Second, the resistance against HRM policies might well be caused by the fact that teachers employed in regional colleges are, in general, not really satisfied with the management style in their own school and have the impression that their management does not provide equal opportunities for career advancement (Ministry of Education, 2010).

It goes without saying that the further development of coherent HRM policies aligned with the strategic goals will require additional time and attention. Issues concerning, for example, teachers' support of the implementation of a HRM policy in their own school and its effects on teacher engagement in professional development, career opportunities, and teacher performance will require additional research. Thus far the role and effects of HRM in vocational education appears to be an under-researched area.

#### **6.4 Features of the Teacher Workforce and Their Implications for Professional Development**

In this section the main features of teachers working in vocational education are addressed briefly. In total, four features will be presented together with their implications for professional development. Firstly, characteristic for vocational education

is that there are at least three groups of new teachers with distinct backgrounds that start a teaching career (see De Bruijn, 2009; Van der Klink, 2012):

- Teachers with a solid background in the occupation they are educating for. Their own work experiences allow them to teach students the essential work-related skills and knowledge, but usually they do not possess any formal teaching qualifications. They are skilled professionals yet still very novice teachers. For them it is mandatory to attend the required training scheme at the start of their teaching career.
- Teachers with a degree in a general subject (e.g. for one of the languages or exact sciences) that allows them to teach in secondary education (ranging from pre-university education to pre-vocational education) and teachers with a bachelor teaching degree in a vocational subject (e.g. in nursing, care or one in the technical domain). Compared to the first group that enters vocational education with substantial relevant work experiences, the teachers with a degree in a general subject are usually much younger and do not have considerable work experiences in the vocation they are educating for. Teachers with a degree in a vocational subject are usually older and have considerable experience in the vocation they are educating for. They are more similar to the first group, but decided at a certain moment in their career to combine working with attending a teacher education program in a vocational subject.
- Teachers with an academic degree who possess theoretical and research-based knowledge that provide students the contexts and comprehensive background information. These teachers usually do not possess a teaching qualification and vary greatly in their practical work experiences in the vocation they are educating for. Compared to the two other distinguished groups of novice teachers this group is relatively small.

The different backgrounds of teachers entering vocational education demand customized professional development trajectories, especially during the induction phase. However, such customized trajectories are rare, as will be further explored in Sect. 6.5.

A second characteristic of teachers is that, because of their considerable workload, the opportunities for reflection are usually quite limited. In that respect the notion of ‘routine professional’ (Weggeman, 2007) applies to them, which implies that in order to cope with the daily work pressures teachers need to utilize standardized approaches as much as possible, even when their work in fact demands inventing new solutions. These standardized approaches are strongly informed by their daily work experiences and the related on-going development of their repertoire of practical, but often rather implicit, teaching knowledge. As a consequence of the institutional habits and the ingrained beliefs of what constitutes good education, teachers become increasingly skilled in performing their work duties within the given constraints inherent to their daily work. They become better in balancing the many tasks they usually perform, however, they tend to overlook too easily the novel and non-routine aspects of their work, which in fact would require reconsideration of the appropriateness of their existing repertoire of approaches (Kwakman, 2011).

Eventually, the massive workload and the strong focus on routinized approaches may even limit one's willingness and ability to become actively and positively engaged in new and challenging innovation opportunities, even when more favorable learning conditions are provided (Boud, 2006; Van Eekelen, 2005).

Thirdly, characteristic of vocational education is the different kinds of expertise that collectively constitute the notion of a good teacher (De Bruijn, 2009). Traditionally, there has been a strong focus on teachers' subject matter and pedagogical expertise, however, the need to further develop teachers' research and innovation expertise has become apparent as a prerequisite for the sustainability of vocational education in the long run (Nieuwenhuis, 2013; Van der Klink, 2012). That does not necessarily imply that every individual teacher should possess those four different kinds of expertise, but it does mean that the conventional focus on subject matter expertise and pedagogical expertise does not fully meet the current and future needs of vocational education anymore. The acknowledgement of the importance of other kinds of expertise may well lead, in due course, to more various professional development trajectories and career opportunities and ultimately result in an increasingly heterogeneous teaching workforce.

Finally, characteristic of teachers is that theirs cannot be regarded as a well-organised profession with a high social status (Varkey GEMS Foundation, 2013) and this applies to teachers in vocational education too. In 2011, the Education Cooperation has been launched, which serves as a professional body to strengthen the voice of teachers of all school sectors, and, as a representative of teachers, aims for safeguarding the quality and status of the teaching profession. Given its infancy, however, it is hard to predict what the impact of this Education Cooperation will be in the long run and whether it will serve as the ultimate professional body that steers the ongoing debate regarding the quality and professional status of teachers (Snoek, 2014). Teachers' current professional standing seems to be comparable with semi-professions, such as social workers (Varkey GEMS Foundation, 2013), and this is echoed in their professional development, which is easily overlooked and not really safeguarded, despite national legislation and agreements wherein the voice of teachers themselves is not really a decisive factor.

## **6.5 Professional Development of Teachers: What Do They Actually Do?**

This section focuses on the professional development taking place throughout the teaching career after being appointed in vocational education. Unlike the professional development of teachers in primary and secondary education, the policies and practices concerning teachers in vocational education are not grounded in considerable empirical evidence and lack elaborate theoretical models that describe and explain the factors and conditions that are conducive to their professional development. In fact, the professional development of teachers in vocational education is a

rather under-researched area, and although in recent years their professional development is receiving more attention from scholars, there is still a dearth of empirical underpinnings, as was mentioned by, for example, Nieuwenhuis (2013).

This section pays attention to teachers' induction, lifelong learning throughout the teaching career, and the link, or absence thereof, between professional development and innovation. Finally, this section points at research as an emerging and powerful professional development activity.

Induction refers to the process of becoming a teacher, which spans a period of about 3 years and usually refers to two levels of induction (see Van Velzen, Van der Klink, Swennen, & Yaffe, 2010). At one level, a type of organisational induction is required in order to become acquainted with the norms, values, rules and culture of the institute the new teacher has been appointed at. On another level, the new teacher needs to become a member of the teaching profession and needs to acquire the skills and knowledge that are necessary to perform as a competent teacher. Though formal arrangements for new teachers exist, also in Dutch vocational education, the induction of teachers is usually rather informal and mainly consists of occasional and individual learning and depends strongly on the teacher's willingness to perceive and utilise the learning opportunities in the new job position (Boyd, 2010; Knight, Tate, & York, 2006; Van der Klink, 2012). In Dutch education the induction phase is becoming increasingly recognized as an important phase in teachers' careers, and initiatives on a local and national scale have been launched recently to support novice teachers in various education sectors, including vocational education. The need to invest in teachers' induction can be justified by various international research findings indicating that a poor induction results into higher turnover rates and lower levels of job satisfaction (Ingersoll and Strong 2011) and will likely have a negative impact on teacher performance.

Especially for vocational education induction measures seem beneficial since considerable numbers of teachers in this sector do not possess a teacher qualification at all. In the previous section (see Sect. 6.3) three groups of new teachers entering vocational education have been distinguished and these three groups ideally require, because of their different backgrounds, a customized induction phase that prepares them for a teaching career in vocational education. With regard to the content of induction programs, new teachers experience a great need for exchanging experiences with experienced colleagues and with other newcomers. A mix of formal and informal learning opportunities seem to be most appropriate, as Hodkinson and Taylor (2002) proposed: collaborative training activities for newcomers that allow for sharing experiences and concerns combined with mentoring and supervision and informal learning opportunities through team teaching, co-teaching and all kinds of communication with colleagues. So far it is unclear, due to the lack of research findings, how induction is actually implemented in vocational education and the kinds of effects it is having on novice teachers. Professional development is foremost considered as being engaged in formal learning activities, such as workshops, training and courses. There is growing support for the opinion that courses are necessary to increase, for example, the pedagogical and educational design expertise of teachers. Also there is more attention for providing teachers

access to master's degree programs. Regardless the type of formal learning trajectory, there is too much optimism about the gains of increasing teachers' educational level through formal learning, since attending courses or a master program does not imply that the newly acquired knowledge and skills are automatically transferred to the own vocational school context (Snoek, 2014). There is no compelling evidence that investments in formal learning will immediately yield the desired results (e.g. better equipped teachers). As transfer theory indicates (De Rijdt, 2011), the lack of work opportunities to apply new skills, high workload levels, fellow-teachers' and managers' social support and their feedback all contribute to the level of perceived constraints that hamper teachers' willingness to apply what has been learned during trajectories. A policy that only consists of offering opportunities to enrol in formal learning activities is rather naïve, since it ignores the necessity of simultaneously adjusting teachers' work contexts in order to foster the application and further development of what has been learned (Van der Klink, 2012). In his research on teachers of regional colleges who were attending a master program, Snoek (2014) observed the effects of measures to support learning transfer during the program. The involvement of the teachers' supervisors and HRD staff of the regional colleges in the design of the master program, and the centrality of the research study in the master program encouraged teachers to better align their daily work at the regional college with the master context. Despite these encouraging measures the actual effects remained mainly restricted to teachers' own classroom practices and did not contribute significantly to the innovation power of the regional college as a whole.

Although compelling research data are lacking, there is reason to assume that informal learning in the own workplace plays a dominant role in teachers' learning throughout their career (see, for example, Nieuwenhuis, 2012). However, the nature of those informal learning activities and their actual impact on performance and teachers' future learning and development remain rather unclear, because in many cases informal learning activities are not recognized and labeled as learning per se, but are considered as, for example, problem solving activities. Research in adjacent educational sectors, however, indicates that in general informal learning has only a modest effect on teachers' performance (Van der Klink, Van der Heijden, Boon & Williams van Rooij, 2014). This is partly due to a tendency to opt for individual learning activities (reading articles, surfing on the internet) or to join group activities (attending communities of practice, sharing experiences) that allow individual teachers to exhibit high locus of control levels (Schildwacht, 2012; Van der Klink, Boon, & Schlusmans, 2012). Activities that require teachers to step out of their comfort zone and to actively search for feedback and to examine and discuss their views and beliefs (e.g. co-teaching, portfolio assessment, discussing video fragments of own teaching activities, discussing concrete student performances) are usually not applied on a very large scale, but definitely will have a more significant effect on teachers' professional development (Hattie, 2009; Hattie & Timperley, 2007).

Does it matter whether professional development activities have a formal or informal character? According to Veen et al. (2010) the nature of the activity is not the distinguishing factor in determining the effectiveness of the professional development activity. Far more influential is, for example, how the learning contributes



to coping with daily work challenges, and how this promotes teachers' engagement in active, inquiry-based learning, and collective learning with team members. In addition, school-related factors appear to be influential. When teachers experience that their learning is closely linked to the school improvement policy, then their willingness to participate increases accordingly. Though the nature of the learning, either formal or informal, is not decisive for its effectiveness, there appears to be a strong tendency to narrow down professional development to formal learning. Perhaps this is also partly due to the fact that for HR officers it is far more convenient to report the numbers of formal learning activities in their yearly reports to the school board, rather than to gain insight into teachers' engagement in 'fuzzy' informal learning activities. Moreover, for teachers themselves it is also easier to demonstrate their own learning activities by pointing at the courses and workshops they were engaged in, rather than providing evidence of their informal learning activities: what should they report then and how? This difficulty of the possible lack of recognition and transparency of informal learning becomes even more apparent when teachers feel obliged to register themselves as a professional teacher and need to demonstrate what they have done to maintain or increase their professionalism, as has been proposed by the Education Cooperation. There is great need for procedures and instruments that support the understanding of teachers' various kinds of informal learning activities and their effects on teachers' performance (Van der Klink, 2012). With regard to professional development, Nieuwenhuis (2012) advocates that, at least for reasons of effectiveness and efficiency, there is a strong need to further explore how to link professional development with educational innovations. It goes without saying that innovation requires close cooperation of teachers and collective learning in teams, rather than individual learning processes (Teurlings & Uerz, 2009). Effective team learning encompasses three processes (Van den Bossche, 2006): (1) sharing the available cognitive resources, like ideas and thoughts, (2) co-construction of new ideas, and (3) constructive conflicts leading to some kind of temporary agreement upon team matters.

Goes-Daniels (2011) noticed in her research that teacher teams experienced substantial difficulties with analysing and reflecting upon their existing practices and were unable to develop new initiatives that were informed by these collective reflections. If teams succeeded in generating new initiatives then they were usually unable to implement the initiatives in their daily practice. Given how teaching in vocational education demands closer cooperation between teachers, resulting into the establishment of teams that are responsible for delivering and improving education programs, it is obvious that more emphasis should be placed on encouraging and supporting teachers to exhibit team learning behaviour that allow them to integrate professional development with the desired innovation goals.

An issue raised frequently in discussions about professional development in recent years is what De Bruijn (2009) defined as the research expertise of teachers; teachers becoming research active themselves. Snoek (2014) notes that in the TALIS survey on professional development by the OECD (2013) teachers indicate that they experience doing research as one of the most powerful forms of professional development. Conducting research is a powerful activity because teachers are challenged



to ask themselves questions about the problems they are confronted with, the challenges they want to address, and to search for recent scientific research outcomes that might be useful for improving their practice. Moreover, if these outcomes are not available then they need to actively search for evidence-based answers by conducting research themselves. The importance of teacher research is entirely in line with the responsibility (teams of) teachers have in providing quality education and it also reflects the desire of teachers to respect and enhance their professionalism.

## 6.6 Conclusion

Professional development can no longer be considered as just a voluntary endeavour of individual teachers, instead, it has become mandatory for teachers entering the field of vocational education. It is broadly acknowledged that investments in professional development are required, either in pre-service teacher education or throughout the entire teaching career, to ensure that the teaching workforce remains prepared for the challenges encountered in vocational education, now and in the future. This acknowledgement, however, is not fully reflected in today's practices concerning professional development, since the political and scholarly debate and the implementation of measures fostering professional development are still in its infancy.

As this chapter shows vocational education consists of various types, regional colleges and professional higher education respectively, and both have their own characteristics as well as some commonalities. Both types differ with regard to the role of the national government, which has a much more prominent responsibility for safeguarding teachers' professional development in regional colleges, whereas in professional higher education the unions and the employers are more influential in decisions on this particular matter. Nevertheless, it can be concluded that the influence with regard to human resource management and development of the employers of teachers in regional colleges, united in the MBO Council, is increasing lately.

Concerning teacher education, the situation in the Netherlands appears to be rather fragmented and quite difficult to explain. There are teaching programs for teaching general subjects and a few teaching programs preparing for vocational subjects, such as in nursing, care and technical subjects exist, however, the vast majority of teachers in vocational education do not have a teaching certificate. Most teachers only attend a very basic teaching training when they are hired and this training is mandatory for earning a permanent job contract. Although some policy measures have been implemented to ensure a better fit between teacher education and the teaching practice in vocational education, it is unlikely that more specialized teacher education programs fully preparing for vocational education will be launched in the next years.

With regard to professional development, both types of education consider professional development throughout the entire teaching career as utmost important.

However, the alignment of professional development plans with the strategic goals of the school is weak while simultaneously being very much needed to increase the performance of the school and to justify further investments in professional development. These plans are not always welcomed by teachers since they are considered too much as top down, implemented obligations rather than a measure supporting teachers by ensuring resources and support for their own choices regarding their professional development. This reaction by teachers can be partly explained by the fact that teachers have had the feeling of being downgraded to the executors of education policy devised by the school board or imposed by the Ministry of Education. Teachers felt that their autonomy and professionalism were not respected anymore (see Sect. 6.2). School leaders and boards seem to be aware of this now, which may lead to a reevaluation of the position of the teacher as a valuable professional. Striking the right balance between the organisational needs and teacher ambitions will remain a point of interest for the coming years.

With regard to the professional development activities there is hardly any evidence on the kinds of activities teachers actually perform. Research is definitely needed to shed light on professional development activities that are carried out and their impact on teaching, student achievements, teacher identity and teacher careers. The limited available research findings point at rather restricted professional development practices and are indicative of rather low levels of investments in this area. It goes without saying that research findings may contribute to more accurate insights into the benefits and pitfalls of professional development and the factors and circumstances that are linked to this phenomenon. For future research we advocate an expanded view without narrowing it down to the policies and practices and immediate benefits for schools and teachers, but also examining how professional development contributes to the status of the entire vocational education sector and its teaching workforce as a whole instead.

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**Part III**  
**Educational Programmes:**  
**Teaching and Learning**

# Chapter 7

## A Dialogue Worth Having: Vocational Competence, Career Identity and a Learning Environment for Twenty-First Century Success at Work

Frans Meijers, Reinekke Lengelle, Annemie Winters, and Marinka Kuijpers

### 7.1 Introduction

In post-industrial societies, employers are looking for graduates with so-called twenty first century skills, while previously the emphasis was on technical skills (Cedefop, 2010; Grugulis & Vincent, 2009; Leckey & McGuigan, 1997). The Dutch government has enthusiastically recognized the demand for these new skills (Bussemaker, 2014), embracing the idea of their development (Allen & Van der Velden, 2011) but without realizing that such skills require a different learning environment than when the aim is to train students to be technically competent (Payne, 2000; Smith & Comyn, 2004). The underlying dimension of twenty first century skills, especially in the service and knowledge economy, is intrinsic motivation (Schulz, 2008). Indeed, the core of employability is the ability to show flexibility based on commitment to work and to the employer in changing times (Hillage, Regan, Dickson, & McLoughlin, 2002; Lafer, 2004).

That said, there are serious doubts about the intrinsic motivation of students and the level of knowledge and skills they can acquire within the existing Dutch vocational education system (Biemans, Nieuwenhuis, Poell, Mulder, & Wesselink, 2004; Inspectie van het Onderwijs, 2014). An important reason for this situation seems to

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be the fact that most students fail to develop a clear career wish, let alone a career or vocational identity, during their time at school (Geurts & Meijers, 2009). Studies indicate that most students in vocational education are not intrinsically motivated to do their school work (Inspectie van het Onderwijs, 2014) nor do the majority of them know what they want to do career wise (Meijers, Kuijpers, & Bakker, 2006). The latter fact leads to rather random educational choices (Plane, 2009) and subsequent dropout rates of between 30 and 50% (Eurostat, 2008). A Dutch study (Borghans, Coenen, Golsteyn, Hijgen, & Sieben, 2008) estimated that the societal costs of students taking longer to complete their studies as a result of unsuitable choices was 5.7 billion euros a year.

In this chapter, we argue that the learning environment required to foster intrinsic motivation must be aimed at the development of particular career competencies (Kuijpers, 2003) and a career identity (Meijers & Lengelle, 2012). Research done by the authors in Dutch vocational education also shows that career competencies and a career identity can be successfully developed if students are given more room to make their own choices regarding their education and if they have work experiences about which they can have meaningful career conversations (Kuijpers, Meijers, & Gundy, 2011; Meijers, Kuijpers, & Gundy, 2013).

In recent years, Dutch schools for vocational education have increasingly invested in career guidance to address the issues described above. They are helped in this by the Dutch Department of Education, which started a project within pre-vocational education in 2010 (Kuijpers, 2011; Kuijpers & Meijers, 2011) to stimulate effective career guidance. In 2012 they also started a 3-year project within secondary vocational education. The latter was referred to as the 'Stimuleringsproject Loopbaanoriëntatie en -begeleiding in het mbo' (Promotion of vocational guidance in secondary vocational education). In this ongoing project, particular attention is paid to policy development with regards to career education in schools and to the training of teachers so that they learn to have meaningful career conversations with students. That said, most school managers still have little or no vision regarding career guidance and counselling; they simply invest in doing more of the same (i.e. repeating the same well-established but ineffective guidance activities) (Kuijpers & Meijers, 2013; Meijers, 2008). In part, this lack of a clear vision among managers is the result of the lack of consensus about what constitutes effective career guidance in an educational context, not only internationally but also nationally (Hughes, Meijers, & Kuijpers, 2014).

## 7.2 Career Learning: A Short History

In The Netherlands (Meijers, 1995) as well as in other Western nations (European Commission & OECD, 2004; Irving & Malik, 2005; Sultana, 2004; Watts & Sultana, 2004) career guidance in education is primarily based on the trait-and-factor model. In this approach, which has had a huge influence on the shape and content of career

guidance and counselling in education – especially through the work of Holland (1973, 1985) – the concepts ‘informed choice’ and ‘decision making’ are key. The idea here is that a good career choice is made when the personality and the talents of a potential employee match with the required knowledge and skills of a particular job. Following this line of reasoning, counsellors and teachers are expected and encouraged to provide students with reliable information about their talents and with information about the knowledge and skills that are needed to carry out particular jobs. Finally, it is assumed that students can and will make rational career choices as a result.

Until the late sixties, independent guidance offices provided the services described above and children from families with higher socio-economic status tended to benefit most (Pere, 1986). However with the increased meritocratisation of society, every student was soon entitled to career guidance and the corresponding mentality in support of ‘equal opportunity’ and upward mobility began to dominate. By the late sixties, every school for secondary education – including pre-vocational but not including secondary vocational education – was legally required to appoint at least one career counsellor or so-called career teacher to provide students with career services. The independent offices were also heavily subsidized by the government so as to extend their services to all pupils, but they operated mainly outside vocational education (Pere, 1986: 140).

However, by the early eighties, it became apparent that huge quantitative and qualitative discrepancies existed between the educational system and what was needed on the labour market. In addition to the independent offices for careers guidance and career teachers, two new players entered the field of career guidance. First, in 1980, regional offices for the apprenticeship system started providing pupils with information on the dual-learning system, although they offered minimal guidance for those following this route. Second, so-called “contact centres” to improve connections between schools for vocational education and the regional labour market were founded in 1985. This was done primarily by arranging expanded and better work-placement opportunities for pupils. Adults could obtain free career guidance via yet another player: the employment office, but only if they were unemployed and the employment office deemed such career advice necessary. Adults could also consult with an independent office for career guidance but at their own cost and, as Wolf (1993) has shown, very few adults did so.

Career guidance was initially rather directive (Pere, 1986) but due to the growing democratisation of society, emphasis on group discussions, and the emergence of psychological counselling in the 1970s, the field became more concerned with the process of increasing self-awareness (Meijers, 1995). Career-guidance services began to focus on the “widening of one’s horizon,” which Taborsky and de Grauw (1974: 116) understood to include all those activities which “*help to open the eyes of the individual for the world surrounding him, for his social situation, for the place he takes therein, for the environment that determines the scope of his views, for the degree to which he has been determined by his gender role, for his school situation, that sometimes only represents a very small world.*” However, despite

these new developments, the emphasis in guidance in the majority of contexts including vocational education remained on the trait-and-factor model, which meant that career services focused mainly on the psychometric testing of clients (Blommers & Lucassen, 1992; Meijers, 1995).

### 7.3 Growing Insecurity

The trait-and-factor approach remained unchallenged as long as occupational structures were generally stable with well-defined occupational roles within a predictable labour market. This, however, changed rapidly in the decades that followed. In 1976, in The Netherlands there were 5500 recognized professions and 2000 job titles that could be described as “nonspecific” (e.g. policy assistant; regional advisor; data worker) (Wiegersma & Van Bochove, 1976). By 2010 the number of professions had dropped to 1073 and the list of “nonspecific positions” had grown to over 23,000 (CBS, 2012). This created a sense of uncertainty because it is much more difficult to identify with a non-specific job title than with a profession, mainly because a profession has a much clearer ‘added value’ to society. The labour market also changed rapidly. In the middle of the 1960s, the Dutch economy was at the height of its industrial phase. At that time, 45% of the labour force worked in industry. This percentage dropped to 36% by 1975 and in 1985 it dropped to 27% (Dodde, 1988, pp. 47–48). Available employment shifted more towards service and knowledge-based activities.

In an industrial economy upward mobility is especially linked to age and job: after a certain number of years one is promoted to the next tier but remains in the same profession (Mintzberg, 1983). This changed with the appearance of a service economy. According to Korbijn (2003, pp. 45–46), there are three megatrends in the Netherlands:

- (a) the market is becoming more and more demand driven: clients want the most affordable products that are tailored to their specific needs and wishes;
- (b) there is an increase in globalization (i.e. the ‘global village’) – clients, business partners and competitors are now found around the world;
- (c) technology quickly becomes obsolete and the demands from the market can rapidly change.

The effect of these megatrends is that the market continues to change in unpredictable ways, that the ability to innovate is a more important factor in keeping up with the competition, and that knowledge has become essential. In other words, more and more employees are expected to be entrepreneurs: they have to maintain their ‘employability’ and that means they have to be self-directed in their careers (Savickas, 2013; Steenbruggen, 2003). For career guidance this also means that emotional labour (i.e. work where emotions must be applied in a conscious way) is increasingly important (Doorewaard & Benschop, 2003; Sennett 1998).

With the above changes in mind, it is clear to see why the trait-and-factor approach is limited. One's career path has increasingly become a 'boundaryless career' (Arthur, Khapova, & Wilderom, 2005), which makes it more and more difficult to make rational and information-based career choices (Guindon & Hanna, 2002; Mitchell, Levin, & Krumboltz, 1999). This, combined with the insight that young people are not yet capable of making conscious and informed choices (Blakemore, Burnett, & Dahl, 2010; Krieshok, Black, & McKay, 2009), career guidance and counselling in the traditional sense is becoming obsolete (Kuijpers et al. 2011; Meijers & Lengelle, 2012). This is made even more clear in vocational education when one considers the sheer number of "wrong" choices that are made at every stage of the choice process. Between pre- and secondary vocational education, many students choose a direction that has nothing to do with their pre-vocational education. Steenaert & Boessenkool (2003) conclude, "*students choose their studies (i.e. topic or direction) without having a clear idea of the actual content of that choice is, nor a clear perspective of employment.*" The research of Van Esch and Neuvel (2007) shows that at least 25% of students make rather unmotivated and random choices with regards to secondary vocational education. These students make the choice based on what Neuvel (2005, p. 9) calls the garbage-can model: "*this I don't want, nor this, and I really don't want to go that way. Alright then, it will have to be this.*" The same study shows that the students who can't explain the reasons for the choice they have made often don't get placed in the course of their choice. They must then settle for their "second choice" and subsequently don't feel at home there. Not surprisingly, these students fail to complete their studies more often than the average.

According to the so-called JOB-Monitor study that is published annually by the Jongerenorganisatie Beroepsonderwijs (Organisation of Students in Vocational Education), students in vocational education are also rather dissatisfied with the guidance they receive. About 135,000 students took part in the latter research. In 2012 only 30% were satisfied with their choice of studies and the career guidance they received, 24% were dissatisfied with both, and 46% scored neutral. In this study, students were also asked to evaluate the guidance given by their mentor/ employer during their work placement. The majority (60%) of students were satisfied with guidance and only 11% were (very) dissatisfied. The career guidance at schools lags far behind: only 34% of students are very satisfied, 27% are very dissatisfied, and 39% have no opinion (Jongerenorganisatie Beroepsonderwijs 2013).

## 7.4 A Strong Career-Learning Environment

Modern career learning theories (f.i. Savickas, 2002, 2013) state that in order to find their way, students need to develop a coherent story about their future that gives them a sense of identity and direction (Wijers & Meijers, 1996). Schools should not give more (or even "better") information to students in order to make an 'informed'

decision (that in almost any case isn't well-informed at all; see Van Esch & Neuvel, 2007), but should help students to develop such a story instead. Career stories emerge in a dialogue in which personal meaning is attached to concrete experiences regarding work (Lengelle, Meijers, Poell, & Post, 2014, 2015; Meijers & Lengelle, 2012). In order to facilitate and have such a dialogue, the thoughts and feelings of students with respect to their work experiences must be given a central place in the conversation (Bardick, Bernes, Magnusson, & Witko, 2006; Philip, 2001). Students, however, do not seem to participate in a career dialogue willingly; they are rarely motivated to participate in reflective activities about their careers when these are prescribed as part of the curriculum (Mittendorff, 2010). Due to the highly theoretical nature of school curriculum, they do not see the connection between mandated 'reflective' activities and 'real life' and, therefore, regard reflection with the help of portfolios or personal development plans as largely useless (Mittendorff, Jochems, Meijers, & den Brok, 2008).

Research by Kuijpers et al. (2011) and Kuijpers and Meijers (2012a) makes clear that career stories develop in part as career competencies are being learned, but career competencies are also the result of the learning process that shapes career identity. A career identity, in other words, is the result of experiential learning: reflection and action must go hand in hand. Kuijpers & Scheerens (2006) and Kuijpers, Schyns and Scheerens (2006) identify five distinctive career competencies: capacity reflection (observation of capabilities that are important for one's career), motivation reflection (observation of wishes and values that are important for one's own career), work exploration (researching work and job possibilities), career directedness (making thoughtful decisions and taking actions that allow work and learning to correspond with one's capabilities and motivation and challenges at work), and finally, networking (building and maintaining contacts focused on career development).

In a large-scale empirical study among students in Dutch pre-vocational, secondary and higher vocational education, Kuijpers et al. (2011) and Kuijpers and Meijers (2012a) showed that a learning environment that stimulated real-life experiences with work and a dialogue about these experiences contributed to the development and use of career competencies. Even when personality traits of students and their differing educational programs were taken into account, the characteristics of the learning environment influenced the degree to which and the kind of career competencies that were learned and used by students. In particular the career dialogue in schools and the conversation students have in the workplace proved to be crucial. Both contributed to career reflection, career-forming (work exploration and career directedness), and networking; in fact this dialogue was more strongly correlated with the development of career competencies than personality traits were.

In groups in which a career method or a so-called personal-development plan was used, students reported reflecting more on their careers. Also in groups in which students, who threatened to drop out, were engaged in a dialogue, more reflection took place. This didn't mean, however, that these students gave more direction to (or participated in 'career-forming' with regards) to their careers. That said, more traditional forms of career guidance, such as a conversation with the guidance counselor

and career guidance tests, did not noticeably encourage students to use career competencies either. To encourage students to become more self-directed in their careers, it seems advisable to allow students to make their own choices about what they wanted to learn, and ask them to articulate why they wanted to learn those things. It was also found that concrete experiences in the workplace and assignments in school should be used at to promote reflection among students and to help them orient themselves with regards to their career futures. Conversations about these experiences were crucial in helping students apply career competencies.

A hypothesis of the study was that a strong learning environment not only allows a student to engage in a dialogue with workplace mentors and teachers about his or her career, but must be practice-based, too. This means that students get the chance to engage in numerous and varied hands-on work experiences. Students who did more work placements, reported that they indeed gave more direction to their careers and they also networked more frequently. However, they didn't reflect more on their careers than those who didn't do work placements. To achieve reflection, a dialogue at school or in the workplace had to be set up. In other words, in order to actually apply the career competences, the organisation of the curriculum or the use of certain methods and techniques was not important, but rather the engagement in and the achievement of a career dialogue was essential.

A strong career-learning environment is still rare in Dutch vocational education. Meijers et al. (2006) did research with 87 classes in pre-vocational education, 98 in full time and 41 in part-time secondary vocational education. Of these 226 classes only 3 had a strong and 48 had a moderate career-learning environment. In 175 of the classes, students weren't given the opportunity to talk about their work experiences and they had little or no active influence on their own school careers. In both 2006 (Meijers et al. 2006) as well as in 2012 (Kuijpers & Meijers, 2012b) it was found that in secondary vocational education, there was no school-wide career guidance policy/plan. This means that every unit is essentially doing their own thing and not necessarily with an underlying plan that would direct those efforts. And although there was an increase in the use of the portfolio and personal-development plans, these instruments are mostly used with an aim to improve success in school but not to reflect on work or career questions (see also Mittendorff, 2010). Indeed, it seems teachers are quick to send students to the career-advice centre for help when they encounter problems with their studies. It is noteworthy, however, that in the care-sector, there is a stronger learning environment for career learning. Programs that focus on caring professions are more successful in setting up integrated career orientation and guidance, than other programs of study. Technical training programs score the lowest in this area; career orientation and guidance is often very traditional in these settings. It's also clear, that in the lower levels of the training programs (level 1 and 2) more guidance is done by teachers. Therefore, the guidance offered is more monological in nature than between students and teachers at level 3 and 4 where teachers have more training in career guidance.

A strong learning environment is also not present in the businesses where students do their work placements. Meijers interviewed 27 students and 18 mentors from the administrative sector and the metal industry. According to students, the work

placement is rich in context but poor in giving them the chance to have a reflective dialogue or to be coached. There is often a positive relationship between students and mentors, but these relationships are focused mainly on teaching ‘job-related skills’ and aimed at job socialization so that students learn how to behave at work according to the dominant norms and values. Mentors and other workers view whether the student achieves ‘maturity’ during the work placement as a rather random side effect. This is also the view held by the school-based mentor; everyone involved considers this a coincidental process, not something that can be stimulated deliberately. The research shows that students usually work within a ‘controlled’ situation with their work-place mentor – situations where job skills are of primary importance and where there is little room for so-called ‘core problems’ or work-place dilemmas.

## 7.5 Career Dialogue

A longitudinal study, that Kuijpers, Meijers and Winters (2010) performed in a school for secondary vocational education, showed that to achieve an actual career dialogue in the current education system is difficult. Quinn (1991) showed that in organisations that remain stable over a long period of time, a culture develops that is attractive to personality types who value output, control, and management. Especially in full-time education, the culture with respect to the interaction between students and teachers barely changed between 1920 and 1980. Everything was focused on the efficient transfer of established knowledge in the form of an established curriculum. The teacher was the central figure who was seen to be enthusiastically transferring knowledge to students from his or her precise and well-defined area of expertise. Although school culture has changed since 1980, most of the teachers in Dutch secondary vocational education had their teacher training before or just after 1980. It isn’t surprising, therefore, that even today, schools rarely offer room for the development or expression of student narratives (Winters, Meijers, Kuijpers, & Baert, 2009). Moreover because educational culture is still largely monological, most teachers are very uncertain about their abilities to help students in developing a career story (Kuijpers & Meijers, 2012b; Kuijpers et al., 2010). It is important to acknowledge that teachers feel uncertain in this area because the effectiveness of a dialogical career approach largely depends – as in all forms of counselling (Cooper, 2008; Wampold, 2001) – on the trust the counsellor has on the chosen approach.

In a series of studies, Winters et al. (2009, 2013) and Winters, Meijers, Kuijpers and Baert (2012) used Dialogical Self Theory (Hermans & Hermans-Konopka, 2010) as a framework for understanding and analyzing how conversations about placements foster career construction. The starting point of the Dialogical Self Theory is that the formation of an identity is dialogical in nature because the Self is actually a kind of ‘polyphonic novel’ or combination of various voices (‘I-positions’) embodied in one person. The dialogical self is not static and is inherently trans-



formed by the exchanges amongst I-positions (the internal dialogue with ourselves) and with other people (the external dialogue). From the perspective of the Dialogical Self Theory, the trajectory from real-life experiences to an appropriate career choice ideally starts with the formulation of an I-position, the subsequent broadening of this I-position by means of a dialogue to other relevant I-positions, and runs, via consecutive dialogical shifts, from these various I-positions to a meta-position and from this meta-position to the formulation of a promoter-position. By “I” positions, we mean that a student is asked to enter a dialogue in a multi-voiced way – experiences may be discussed in ambiguous and contradictory ways (e.g. I like working with seniors; I don’t like working with them when they don’t interact; I like working with them when we are both quiet). However, in order to turn dialogues into competencies and actions, an ability to witness the presence and influence of the various “I” positions is needed as well. This is where a meta-position is valuable, as it allows the individual to view one’s I-positions from a distance. In career learning this means that we are able to develop and express various perspectives and explore options without becoming ‘married’ to any one of them from the outset. The integrative understanding gained through a meta-position is intended to lead us to action or at the very least to the intention to act, while we remain aware of the complexity and changeability of our work environment and ourselves. The ‘position’ that is capable of taking action, with the intention to give a developmental impetus to future I-positions, is called a promoter position.

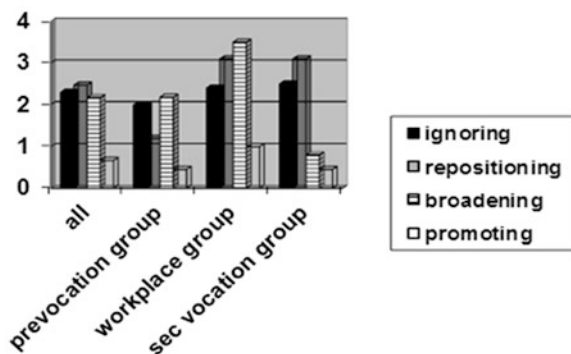
However, as mentioned before, there are doubts as to whether such career dialogues are actually stimulated in schools or at work. Winters et al. (2009) looked at conversations about placements in Dutch secondary vocational education. The research showed that it is not the student who is at the heart of the conversation, but the curriculum and furthermore that mentors in school and from work placement talk mostly *to* (65%) and *about* (21%) students, and hardly ever *with* (9%) them. The students sit with their teachers and their mentors from practice, but this does not mean that they can take part in the conversation and direct it to reflect on their personal learning goals. Little opportunity is given to students to express what they think of their experiences in the work place, let alone about what they have learned or wanted to learn from them. Training conversations are almost completely aimed at the evaluation of the student and on transferring expert opinions from teacher and mentor to students.

Winters et al. (2012, 2013) furthermore explored the quality of career conversations in three culturally different contexts within vocational education: conversations between teachers and 15-year old students in pre-vocational education (‘prevocational group’), conversations between teachers, workplace mentors and 18–19 year old students in secondary vocational education (‘secondary vocational group’) and conversations between workplace mentors and 18–19 year old students in secondary vocational education (‘workplace group’). Results showed that the average conversation does have potential with regards to constructing a career identity. Positioning (i.e. formulating an I-, meta- or promoter position) does happen and is done mainly by students themselves. In pre-vocational education, more I-positions are formulated than in secondary vocational education and more than in the

workplace, probably due to the existing culture of carefulness (i.e. much attention is paid to the well-being of each individual student). In the workplace, more meta- and promoter positions are formulated than in both other contexts, probably due to a business-like culture in which every individual is held responsible for the success of the group. In secondary vocational education, the conversations are longest, but they offer even less room for positioning than the less-standardised and shorter inquiries about how students' placements went in pre-vocational education. This is probably due to the fact that 65% of all students in secondary vocational education enter the labour market immediately after completing their course of studies. This is one of the reasons, the quality of secondary vocational education is under close surveillance by the Department of Education; employers and politicians force schools to use standardized evaluative procedures, which leaves little room for the narratives of both students and teachers (for a description of the same tendency in the USA, see Nichols & Berliner, 2007). A dialogue was not dominant in any of the contexts studied. In other words, when a student 'positions him/herself', teacher and mentor strategies are rarely directed at stimulating the broadening of those positions, let alone focused on the formulation of meta- and promoter positions.

Winters et al. (2013) were especially interested in the response of teachers to student positioning. They found four different strategies: ignoring the *I*-position (ignoring), re-positioning by talking on behalf of the student (re-positioning), broadening the *I*-position without conclusion (broadening), and dialogue in the direction of the formulation of a promoter-position (promoting). Figure 7.1 shows that the three studied contexts show strong similarities when it comes to using strategies "ignoring" and "promoting". In an average conversation a formulated position is ignored twice (to 2.5 times for the workplace and secondary vocational group), while per conversation an *I*-position stimulates a dialogue resulting in the formulation of a promoter-position less than once (0.5 times for the prevocational and secondary vocational group). The strategy "re-positioning" happens twice per average conversation (once per conversation in the prevocational group and three times per conversation in the workplace and secondary vocational group). When it comes to "promoting" as a strategy, an average conversation shows this dynamic twice

**Fig. 7.1** Number of strategies used to respond to positioning in an average conversation, split for the three contexts



(the workplace group stands out with a average of 3.5 times per conversation as compared to the prevocational and secondary vocational groups). The conclusion is obvious: positioning is done by the students themselves and teachers/mentors respond most often with non-dialogical strategies (i.e. ignoring and re-positioning).

## 7.6 Teachers

The fact that teachers respond with non-dialogical strategies is due at least partly a result of feelings of disempowerment. Teachers reported that the conversations they had with students are usually about school progress and rarely about self and future (Kuijpers et al., 2011; Kuijpers & Meijers, 2012b). It was notable that 40% of the teachers felt that their work as career teachers was not well-supported by either the school or other professionals working in the field; 63% of teachers reported that they received almost no support from their managers and colleagues and 54% of teachers reported that they received almost no support from employers or other professionals. The current socio-political climate of education in Western societies favours an approach to teaching and learning in which test preparation and scripted curricula are the preferred methods (Hillocks, 2002; Marshall, 2009). In The Netherlands this tendency is illustrated by the fact that every secondary vocational school is forced to reintroduce Dutch language and mathematics as part of the scripted curriculum. The focus on standardization and high-stakes testing has led to a narrow view of what counts as teaching and learning (Franciosi, 2004; Hargreaves, 2003; Lipman, 2004; Ravitch, 2010). The *Standards Era* policies do not focus on making time for narrative and dialogical encounters with students, leaving teachers even less experienced with this “largely verbal process” that entails “a collaborative relationship” (McIlveen & Patton, 2007, p. 10). Many teachers, however, explicitly ask to be trained in initiating a career dialogue with their students (Meijers, 2008; Kuijpers & Meijers, 2012b).

Kuijpers and Meijers (2011) conducted a study about the effects of teacher training on career dialogues promoting career competency development in students. For the quantitative part of the study, a quasi-experimental research design was used to measure effects among 2291 students. Video-recordings of conversations were used for qualitative research. An important conclusion of this study is that a two-day off-the-job training program for teachers was insufficient to achieve significant changes in guidance conversations, measured at a student level. However, off-the-job training combined with individual coaching and team coaching on-the-job, proved to be effective in improving guidance conversations from a student perspective. An actual improvement requires being guided in applying the off-the-job training in the teacher’s own context. Not only the quantitative study showed changes in guidance conversations after the training program as reported by student, but changes were also seen in the recordings of conversations. In other words, teachers asked more career-oriented questions and students gave more career-oriented answers.

Despite the positive effects of the training and the fact that many teachers asked for training in career conversations, it is not easy to motivate teachers to participate in such programs. A need for professionalization is not self-evident to teachers (Van Driel, 2008). They often prefer short off-the-job training courses to learn how to work with specific instruments. The training described by Kuijpers and Meijers, in contrast, is not only more time consuming (a combination of off-the-job and on-the-job training), it also contributes to changes in one's professional identity. Development of personality traits and qualities (i.e. identity) only takes place when those who are learning find the content meaningful (and that is something quite different than content being considered 'necessary'; see Hensel, 2010). Teachers find content meaningful when they co-create their own training programs (Van Veen, Zwart, Meirink, & Verloop, 2010) in negotiation with their managers (Lodders, 2013).

It follows from the above that work/learning environments are required that:

- *are practice based*: the learning process of teachers and middle-managers must be based on questions and problems that arise from actual innovative practices that are intentional and in response to concrete problems that result based on those practices. The theory required to explain these problems should be offered "just in time" and "only in the amount needed" to address these problems. In addition, the learning environment must be clearly structured, which means that teachers and middle managers should not have too many innovations occurring simultaneously. In practice, this means that the number of innovations running should be diminished and/or that innovations should be more integrated and convergent. More consideration should be given to learning ability or readiness (in addition to the learning that is desired) of teachers (in terms of their capacity to carry out and carry on with such an innovation load).
- *promote dialogical interactions*: dealing with concrete problems will only lead to changes in the professional identity of teachers and middle-managers (and with that to truly innovative practices) if a conversation between all parties concerned occurs about the personal and societal meaning of one's work. The kind of dialogue that is needed, is described by Shotter (1993, p. 20) as "*a socially constructed myriad of spontaneous, responsive, practical, unselfconscious, but contested interactions*", a conversation that is "*quite the opposite of the apparent representation of dialogue as converging upon a single ultimate 'Truth'*". As will be clear from Shotter's quote, dialogue is something completely different than a discussion. A dialogue means to show and accept uncertainty (see Meijers & Lengelle, 2012).
- *fosters cooperation* and consensus on the basis of a clear and strategic management vision: initiating and keeping such a dialogue going demands transformational leadership (Geijsel & Meijers, 2005; Geijsel, Meijers, & Wardekker, 2007). This type of leadership simultaneously provides direction based on the strategic vision, but also creates space for teachers and middle managers to set out their own tactics to achieve desired goals. At the same time, it is only creates the necessary space when upper management keeps a dialogue going about the concrete work experiences of teachers and middle-managers.

## 7.7 Conclusion

It should be clear from the above that real career dialogues are needed to support students in developing the 21st skills they will need to succeed on the current complex labour market. Students must be helped to develop career competencies and a career identity in order to become intrinsically motivated about their career choices and actual work environments. It is also clear that so far students do not get much help in this area; strong career-learning environments are lacking in almost all Dutch schools for vocational education. Students do get real-life work experiences by doing work placements, but they do not get enough of an opportunity to talk about those experiences during and after their placements. The result is that these experiences don't have much meaning in terms of a career development: most students are unable to cultivate a sense of identity and direction from their work experiences alone. With respect to career guidance, teachers feel they receive little support from their managers and colleagues, although many teachers recognize a need to be trained in initiating career dialogues with their students. In order to make training successful in terms of new guidance behaviours, it is essential that school managers create a strong career-learning environment for teachers, though the *Standards Era* policies that dominate Dutch vocational education at the moment, leave managers little room to do so.

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# Chapter 8

## The Role and Nature of Knowledge in Vocational Programmes

Elly de Bruijn and Arthur Bakker

### 8.1 Knowledge in the Curriculum

In our knowledge economies and knowledge societies, it is generally recognised that knowledge is important for all employees in order for the economy to be competitive (Guile, 2010; Scientific Council of Government Policies (WRR), 2013). However, as soon as we try to characterise this knowledge and to think through how it should be developed in vocational education, we face many challenges. First of all, it is hard to make explicit what employees need to know because the required knowledge base is not only declarative but can also be situated, implicit, episodic and embodied. Secondly, the required knowledge is not only a personal matter but is also distributed within practices, partly outsourced to equipment and socially shared. As vocational education educates for occupations, it faces the question of how to support the development of the underpinning knowledge in educational programmes. This chapter analyses the way vocational education in the Netherlands deals with the issue of positioning the knowledge base of occupations in educational programmes.

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### 8.1.1 Approach

The analysis in this chapter is characterized by three perspectives. The first one is a historical perspective. We concentrate on the period from 2000 until 2013 in which the major reforms of the 1980s and 1990s were actually put into practice at all levels (see De Bruijn, Billett, & Onstenk, 2017). To understand the positioning of knowledge in vocational programmes in this first decade, it is necessary to look back and to look forward. Current states depend at least partly on decisions in the past and foreshadow practices in the future that make a historical perspective more than just descriptive.

The second perspective is a curricular one. The curriculum, as the ‘plan for learning’ (Taba, 1962), is our main focus, in particular the intended one (cf., Goodlad, 1979). A curriculum comprises a series of components with the rationale in the centre (cf., Van den Akker, 2003): aims, content, learning activities, teacher roles, resources and materials, grouping, learning context, time and assessment. The positioning of knowledge is related foremost to the component of ‘content’, which refers to the transformation of occupational knowledge of whatever type or form, into curriculum contents, whether summarised in syllabi or fostered in assignments. Content is typically arranged horizontally, i.e., in separate parallel subjects or themes, and arranged vertically, i.e., sequenced over time. Besides the ‘content’ component, two other components are relevant when analysing the positioning of knowledge in vocational programmes. The first is ‘assignments’ in which the curriculum components of content, learning context, time, grouping, materials and recourses are organised in a particular way to evoke learning. The second component is ‘assessment’, both in terms of ‘what’ and ‘how’. Thus in this chapter we address the positioning of knowledge in vocational programmes from the perspective of the intended curriculum with regard to these three components: content, both the transformation of occupational knowledge into curriculum contents as such and the delimitation, arrangement and sequences of it, assignments and assessments. To refer to vocational programmes we use the term vocational curriculum which covers the components defined in this paragraph.

The third perspective of our approach is that our analysis is research-based. We include publications from both more fundamental studies and practice-oriented research to obtain data about the positioning of knowledge in vocational curricula over the last approximately thirty years with a focus on the period from 2000 onwards. We searched for these results in Google Scholar using the Dutch equivalents of the terms *curriculum*, *contents*, *general subjects*, *vocational subjects*, *occupational or professional knowledge combined* with (AND) *vocational education*. We combined this search with a snowball method looking at the reference list of selected publications, in particular of review studies and PhD theses. Over all it was difficult to find studies that focus on vocational curricula as such, in particular in the last fifteen years. Studies on the positioning of knowledge in curricula are really scarce. However, in recent years there are some promising case studies which focus on very specific domains, such as mathematics for laboratory technicians. Drawing on research results therefore implies blank spots with respect to certain aspects but

also over time as research is also due to policy priorities over time. Despite the rather fragmented results from research sources we aim to build a coherent and transparent picture in this chapter of the positioning of knowledge in vocational curricula.

### 8.1.2 Terminology

In the context of vocational education, which is diverse in itself and very different between countries, we do not seem to have a common international language. We therefore outline some words in this section on the key concepts used in this chapter.

We use the term *vocational education* for all education for occupations, whether low skilled offered by regional colleges or high skilled like physiotherapy or accounting offered by universities for applied sciences. We explicitly focus on senior secondary vocational education (MBO) and higher vocational education (HBO).

The issue at stake in this contribution is the positioning of the various knowledge sources for professional performance in vocational programmes that develop and facilitate students' personal professional knowledge (Schaap, De Bruijn, Van der Schaaf, & Kirschner, 2009). This raises the issue of the relation between the social and individual nature of knowledge. Billett (2011) uses the terms occupations for societal facts and practices and vocations for individual facts and practices. Occupations arise from history, culture and circumstance and are in fact classifications of forms of work that are the products and the imperatives of society and therefore institutional facts. Vocations arise from individual experiences with which individuals engage intentionally, and to which they give meaning; vocations are the outcome of a personal process of becoming. Eraut (2000) defines the relation between individual cognition and the social nature of knowledge in terms of the former being the unique result of an individual learning career through a range of social settings. From a situational perspective on these social settings, knowledge is already present in activities and cultural norms which develop and transform through the contributions of its participants. From an individual perspective, participation in the various social settings fosters a process of re-contextualisation and expansion of prior knowledge and other knowledge as part of these settings. We take the position that there is no clear distinction between individual and social facts and practices. Yet, for the sake of transparency in this contribution we use the term occupation when using a societal perspective and vocation when using an individual perspective on knowledge. We therefore reserve the term *occupational knowledge* to refer to the knowledge sources in vocational programmes.

Following Guile and Young (2003) who make a distinction between types of occupational knowledge, we address in this contribution the positioning of: (a) *codified* knowledge, i.e., mathematics, language and other disciplinary knowledge like mechanics, physiology, economics, nutrition, all as components of occupational

knowledge and; (b) *situated, distributed and embodied* knowledge, looking at both knowledge that can be *explicated* like procedures and *tacit* knowledge as part of activities and artefacts. In the first type of knowledge (a) we thus included disciplinary knowledge only in terms of its manifestation as part of occupational knowledge. As part of the second type (b) we also include professional beliefs, habits and cognitions. In analysing the positioning of the types of knowledge, we focus on the definition and structuring of content as presented to students in programmes, assignments and assessment. Do we see relations with the dynamics of the work processes in practice, to what extent is the scientific logic present, can we see translations to make contents learnable, i.e., presented in line with pedagogical and psychological insights (cf., Brandsma, 1993; De Bruijn, 1995)?

The next section begins with a historical overview of the different emphases in the positioning of knowledge. After that, more concrete illustrations are presented and discussed. Research results, often from small case studies, ground and illustrate the argumentation. The final section notes the most crucial issues and dilemmas that arose from the analyses in this chapter.

## 8.2 A Historical Overview: The Pendulum

Over the past decades, there has been a pendulum swing between extreme positions on the types of knowledge to be learned in vocational education. Before the 1980s, the focus, in particular in full-time vocational education, was on the acquisition of declarative, explicit or codified knowledge. The common complaint then was that vocational students knew a lot but could not use that knowledge in practice (i.e., in work activities). In line with situated cognition theories, educators have increasingly become aware of situated, partly implicit, episodic, embodied, distributed nature of cognition in practice. Apprenticeship and participation became more popular metaphors for learning, and around 2000 competence-based education made their debut in Dutch vocational education. Many advocates of competence-based training have argued that knowledge or subject matter should be offered on a 'just in time' basis with integrative projects in authentic settings being the main building blocks of learning trajectories. Skills and attitudes received more attention, but at the expense of knowledge.

Yet, over the past decade the pendulum has swung back, at least at the political level, to explicit knowledge, foremost general knowledge. In this changing climate, attention to occupational knowledge is also noted, but less explicitly. In fact, the increased focus on general subjects as such, thus not related to occupations, decreases the curriculum time for occupational knowledge. However, vocational colleges (and companies) do not want to return to the situation 30 years ago, and thus face the challenge of teaching knowledge that is relevant for students' future occupations. At the same time, the knowledge related to performance is more and more acknowledged as being important, both in terms of tacit and situated and in terms of professional beliefs, habits and cognitions.

Looking at the pendulum, we might differentiate between roughly three periods, at least at the political level. It must be noted that the development of practice is less clear cut and focused. In practice we see different movements at the same time. For instance an innovation movement such as the Consortium Vocational Education (SCB), a group of schools which over nearly 25 years developed materials and projects in teams of teachers for their members, have always addressed the issue of occupational knowledge in one way or another (Klatter, 2011; Mulder, 2003). In portraying the three periods we also touch upon such movements from the bottom-up. Such bottom-up movements however had little impact on the public debate or national and school policies. Therefore we only highlight the dominant trends.

### ***8.2.1 The Period 1980–1995***

The first period was from 1980 until 1995 with the introduction of the Adult and Vocational Education Act (WEB) as the main turning point. As explained in the first chapter of this book the WEB reorganised vocational education at the secondary level, which also had an impact on the curricula and the perspective on the positioning of knowledge (De Bruijn & Van Esch, 2001; Nijhof & Stijnen, 2001; Nijhof & van Esch, 2004). In this period of roughly fifteen years the pendulum started its swing from subject-based vocational education with a strong focus on teaching codified knowledge in school and learning how to perform and to be a practitioner during placements and particular after examination (full time programmes at advanced level) or during work (apprenticeship).

At the same time, partly outside the political arena, another concept evolved, as a result of experimental provisions for vocational education at lower qualification levels (cf., De Bruijn, 1997; Nieuwenhuis, 1991). Starting points for the development of the new curricula were (a) to relate the content of learning to occupational practice; (b) to stimulate active engagement of the learners with both codified and situated knowledge and (c) to design learning environments in cooperation with companies to enact learning from experiences (Klarus & Van den Dool, 1989) without neglecting the importance of codified knowledge. In line with the emergence of constructivism in education, knowledge development of the individual was seen as a process of negotiation of meaning resulting in personal meaning to the sources of knowledge learners encountered during their vocational programme. At the same time, codified knowledge, declarative as well as procedural was seen as the utmost importance for the young people who engaged in these courses in order to broaden their scope. Assignments and assessments were designed in such a way that learners were stimulated to go beyond experiences, to use multiple perspectives and to develop understanding (De Bruijn, 1997; De Jong & De Wild, 1988). The new educational provisions had an experimental status and were no longer part of the formal education system (see De Bruijn, Billett, & Onstenk, 2017). Teachers, designers and researchers worked together to ground the new provision in current theory and to learn about results during the process.



In this period the critical reports on the vocational programmes which were part of formal senior secondary education (i.e., long MBO courses) stated that the programmes were too rigid with a main focus on acquisition of codified knowledge and not responsive enough to the changes in occupational practice. At the same time, the apprenticeship system which was regulated via a separate government act, was under pressure due to economic recession. Furthermore the apprenticeship system as an educational provision was criticised for being exclusively focused on narrowly formulated performance indicators (Brandsma, 1993; Van Zolingen, 1995). Thus the provision for vocational education at the secondary level was criticised, from the perspective of the contents of curricula with regard to both knowledge and skills. The aforementioned experimental provisions for full-time and part-time vocational programmes at lower qualification level were too marginal, faced difficulties in living up to their ambitions working with young people who had no entry in the formal system and had difficulty getting their diplomas acknowledged by industry (De Bruijn, 1997).

At the beginning of the 1990s several factors forced innovation of vocational education at the secondary level. There was strong pressure from industry and companies in general to focus on performance instead of codified knowledge. At the same time, politics aimed to broaden the aims of vocational education preferring triple qualification goals, namely for occupational practice, citizenship and lifelong learning. The pressure coming from several actors to innovate goals and contents of vocational curricula is reflected in one of the central policy measures as part of the establishment of the WEB, namely the implementation of a coherent qualification structure for vocational education at the secondary level. Immediately after establishment, subsequent policy measures were taken to strengthen the qualification structure in particular by changing the system of attainment targets that was as such part of the WEB, into a system of occupation-oriented qualifications (ACOA, 1999) which soon was replaced by the term competence-based qualification structure (OCW, 1999, 2000; Onderwijsraad, 2000, p. 7).

### **8.2.2 *The Period 1995–2011***

The developments in the first half of the 1990s accumulated in the establishment of the WEB, which we indicate as the start of the second period. At that time, curricula in Dutch vocational education at the secondary level were perceived to be grounded on a firm knowledge base as a British documentary showed (Smithers, 1993). In this documentary the British education system was heavily criticised because of the fragmented nature due to the emphasis on performance indicators related to competencies. Ten years later the same criticism was heard in the Netherlands with regard to Dutch vocational curricula, though the concept of competence-based education in the Netherlands had somewhat different connotations and the majority of schools did not regard performance to be the sole indicator for assessing competence (Onstenk, de Bruijn, & van den Berg, 2004; Van den Berg & de Bruijn, 2009).

The term competence-based vocational education covered various conceptual ideas and practices ranging from technical and managerial thinking in which education is narrowed down to training competency, to emphasising the development of full vocational competence in which autonomous identity development is crucial (De Bruijn & Leeman, 2011). The majority of schools perceived knowledge, skills and attitudes as equally important.

The development of the new competence-based qualification structure took many years. As qualifications define the knowledge, skills and attitudes novices should possess at graduation, these are mere frames for the design of curricula. In practice vocational curricula that prepared for the new qualifications were rather naturally called competence-based despite the fact that no national curriculum was prescribed or developed. Thus curricula differed between schools but some overall tendencies can be noted. The curricula aimed to relate all codified knowledge to the specific occupation the students were being educated for (De Bruijn, 2012). Separate teaching of Dutch language or mathematics diminished (e.g., Neuvel, Bersee, den Exter, & Tijssen, 2004; Onstenk, 2002; Van Kleef, Driessen, & Jongerius, 2007). Assessment tended to focus more on performance (Baartman & Gulikers, 2017). Many schools tried to put into practice self-directed and authentic learning both within and beyond the workplace. The character of assignments often changed in project work directly related to occupational practice and in full-time courses the amount of time spent in the workplace increased. Learning by participation was underlined which also implied recognition of the existence of the situated, tacit and embodied nature of vocational knowledge. These changes also affected HBO and pre-vocational education (VMBO) (Van den Berg & de Bruijn, 2009).

The definitive end of the second period was marked by the moment in 2011 when the Minister of Education submitted an amendment of the WEB to change the term competence-based into occupation-based qualification structure for senior secondary vocational education (as formulated in the ACOA-report of 1999). Although the swing back of the pendulum started some years earlier, this action to change a term into a law could be perceived as a final turning point that also had an impact on other provisions for vocational education like HBO, although HBO is regulated otherwise. The climate and perspective on vocational curricula, including the positioning of knowledge, definitely changed.

### **8.2.3 From 2011 Onwards**

In the third period the pendulum has its swing back and tries to find its balance. Already from about 2005 there were developments which indicated this swing back. A very obvious indication was the debate on the position of Dutch language and mathematics in the curricula. Signals that learning the basics of Dutch language and mathematics received too little explicit attention came from schools and experts already from the start of the new century (Elbers, 2012; Neuvel et al., 2004;

Raaphorst & Steehouder, 2010; Wijers, Jonker, Huisman, Van Groenestijn, & Van der Zwaard, 2007). Although the relevance of teaching Dutch language and mathematics in the context of a specific occupation was recognised, it was stated that separate and explicit teaching was necessary too. These concerns were mainly articulated in the context of the preparation for citizenship, and lifelong learning, i.e., two of the triple goals of MBO, and not so much in relation to preparation for work.

As mentioned before, the tendency was to stress the importance of general knowledge as such and as a consequence of the implementation of national exams for Dutch and mathematics, the amount of time on the roster for the occupational parts decreased. Gradually, the concerns and complaints also addressed the neglect of other disciplinary knowledge, such as foreign language (Van Kleef, 2002), and more direct occupation-related disciplinary knowledge like physics for technical programmes, biology for health care courses and economics for commercial programmes (De Bruijn & Leeman, 2011). While in the 1980s the complaint from industry was that graduates knew a lot but were not able to put it into practice, the new complaint by the end of the first decade of the new century was that graduates had a lot of specific skills but too little understanding. The latter complaint, however, was not so much articulated by stakeholders from the occupational field, but by representatives of the education sector itself and the media in the public debate.

The public discourse about the standards and quality of vocational education, which included the perceived neglect of knowledge, was not only about MBO, but also about HBO. In HBO the concept of competence-based vocational education was adopted a bit later than in MBO (around 2002) and is still present in many universities of applied sciences. Just like in MBO, educational practice in HBO is very diversified. In the stream of the public debate about competence-based education in MBO combined with a couple of negative results in the sector notified in reports of the Inspectorate, quality issues and standards are in the picture in HBO too. Rethinking the positioning of both codified knowledge and socialising with situated, tacit and embodied knowledge is high on the agenda of HBO (HBO-Raad, 2009).

Thus, in the entire sector of vocational education the pendulum is searching for an equilibrium. One important indicator is that assessment practices focus much more on the broad spectrum of knowledge, skills and attitudes than 10 or 30 years ago (Baartman & Gulikers, 2017). In MBO, both separate teaching and assessment of knowledge and skills and integrated teaching and assessment as part of vocational competence are present in vocational curricula (Hermanussen, Verheijen, & Visser, 2013). The everyday practice of how to maintain such a balance is complicated (cf., De Bruijn, 2012). The next section highlights more concrete illustrations of the positioning of knowledge in vocational curricula from the beginning of this century until now. The illustrations come from research on specific topics and show the diverse and current practice of how knowledge is dealt with in vocational curricula.

### **8.3 Manifestations of Occupational Knowledge in the Curriculum**

The illustrations in this section address the positioning of knowledge in vocational curricula, both in the syllabi and in assignments, written and enacted. The diverse and complicated nature of occupational knowledge is shown by the examples not only as such but in particular in designing the curriculum. How does one deal with disciplinary knowledge in its manifestations as part of occupational knowledge? Young (2008) as well as Wheelalan (2010) state that students should recognise and work with diverse types of knowledge and their various manifestations. In order to understand and apply occupational knowledge, the essence of disciplinary knowledge should be taught and not merely the integrated whole of occupational knowledge. Learning to see the differences and boundaries is crucial for fully fledged performance which is adaptive and situated. Moreover the current dynamics of occupational practice and the accompanying appeal for lifelong learning requires such professionals. Following this argument, the issue for the curriculum is how to delineate what should be part of it, enough to understand the principles of the discipline but also to understand and use its manifestations as part of occupational knowledge. Additionally, how do we position the situated, embodied, distributed part of occupation knowledge in vocational curricula? These questions are addressed in the examples below.

#### ***8.3.1 Arrangement of Knowledge in Syllabi***

In vocational education qualifications or agreed standards for occupational performance are the starting point for defining and arranging curriculum contents. In the 1990s some research was done to define the principles for designing and arranging curriculum contents in syllabi of vocational programmes (cf., De Bruijn, 1995, 2004; De Bruijn & Howieson, 1995). The research was done in the context of modularization of programmes, which was a policy-driven innovation movement in vocational education in order to make vocational education more responsive to occupational practice and (later on) also to adopt to individual differences and needs of students. Flexibility was the key word in this period and implied organising curriculum contents although the focus was foremost instrumental affecting organisational aspects of the curriculum.

Research (De Bruijn, 1995, 2004) results showed four different perspectives for defining and arranging contents; these refer to different emphases rather than mutually exclusive perspectives. The emphases varied in relation to the qualification

level of courses and the amount of workplace learning. The four perspectives on or logics for the design of curricula were:

1. logic of occupational practice which refers to the content and nature of work processes such as contents, coherence and sequences of tasks but also the nature of cooperation or typical aspects of the shop floor culture and the risks at work;
2. logic of learning which refers to the way people learn such as learning complex tasks or ill-defined problems and the consequences for arranging contents;
3. logic of 'didactics' (domain-specific pedagogy) which refers to the transformation of disciplinary knowledge in 'didactical' arrangements such as learning materials, contexts, assignments and grouping of students that support learning;
4. logic of pedagogy which refers to the social and cultural contexts and communication that enhance learning.

These logics proved useful to typify syllabi. Vocational programmes with an education concept that emphasised thematic or whole task learning (such as problem based learning) tried to take all perspectives into account. In the syllabi for the school component of apprenticeship, the 'didactic' logics often prevailed. Current approaches in which vocational programmes are situated in simulations or learning companies with real production processes take the logics of occupation practice as a starting point for arranging contents but combine this with the logics of pedagogy (cf., Aalsma, 2011). The delineation, arrangement and sequences of contents in vocational syllabi differ according to the logics that prevail. Aalsma describes this in her book very vividly using a discussion with a teacher and a supervisor in the workplace, about how to arrange the contents for the programme for process operators. The teacher who framed his suggestions from the logics of didactics positioned the concept of the "eye of the belt" in the third year because of its complexity. The supervisor from the workplace claimed the "eye of the belt" should be a crucial content in the beginning of the programme, thus framing his suggestion from the logics of occupational practice.

The results of a research project on the concept of powerful learning environments showed practices on arrangements of curriculum contents with respect to three other principles that focus more on the actual composition of the curriculum contents (De Bruijn & Leeman, 2011). De Bruijn and Leeman studied in 2004–2005 several vocational programmes from the perspective of powerful learning environments. They defined three components which related to the organisation of curriculum contents: (1) formation of vocational identity as the starting point for learning, (2) authenticity and (3) reconciliation of thematic and subject-oriented contents. The third one specifically addresses the positioning of occupational knowledge as they refer to this component in terms of:

Authentic learning (is) supported by learning the underlying knowledge and by training in specific skills. The programme is designed so that the constituent parts relate to each other as far as possible. Mathematics and science support vocational theory, which in turn is related to practice, while learning in practice is a constant factor in the programme. Other elements (such as languages and general entrepreneurial skills) are optimally related to each other and whenever possible support authentic learning. If more subject-oriented components of the course, real assignments and training in skills are interrelated it helps students to understand and perform better (De Bruijn & Leeman, p. 697).

The research results showed that some programmes managed to organise the syllabi around occupational knowledge in its integrated manifestation in the form of projects, and arranged the disciplinary knowledge as supportive elements.

However, explicit attention in practice to define contents, the delineation of it and the arrangement of parts of it in relation to each other (i.e., in a day or week) and sequences (in a year and between years) appeared to be scarce. In most cases the rationale was not very clearly expressed, coordinators and teachers often referred to qualification profiles and standard in terms of what had to be learned. HBO practice is somewhat different because for most courses there are no national agreed qualifications and the accreditation procedures require a grounded syllabus for the defined contents and the composition in sequences or combinations. Currently in MBO the issue of defining and organising curriculum contents receives explicit attention again because a new qualification structure with more holistic qualification profiles has been recently determined. Issues like which of the aforementioned logics to choose or how to balance between the logics and how to arrange and relate the various types of knowledge, are then at the forefront again.

### ***8.3.2 Engagement with Distributed Knowledge in Assignments***

In a research project on negotiation of meaning and the development of personal professional knowledge, Schaap (2011) organised a series of lessons in which teachers, students and experts from occupational practice discussed vocational core problems. These core problems were defined by teachers and experts from occupational practice in relation to the formal qualification profile. Five discussions were used to increase the possibility of fruitful negotiation of meaning. This also included time to get acquainted to each other and to the particular setting. The research showed that the group discussions were rich in exchanging experiences and meaning although perspective taking and confrontation of meanings was less present. In future research the intervention is strengthened. This type of assignment focuses on using various sources of knowledge in social interaction. It thus offers the opportunity to engage with the diverse and dynamic nature of occupational knowledge, developing personal meaning (Schaap, Van Schaik, & De Bruijn, 2014).

### ***8.3.3 Mathematics***

A crucial theme we should address in the context of mathematics is that much of the mathematical models and computations involved in vocational tasks have become mediated by technology (Hoyles, Noss, Kent, & Bakker, 2010). This made the mathematical knowledge required rather invisible, but it also asked for rethinking how the required mathematical knowledge (e.g. interpreting computer output) should be developed (Bakker, Kent, Hoyles, & Noss, 2011; Bakker, Kent, Noss, & Hoyles, 2009).

Over the past years, mathematics educators have worked on innovative ways to help students develop the technology-mediated and situated mathematical knowledge that is specific for particular occupations. Here we give two examples from laboratory education at the MBO level.

The first example is a hybrid computer tool that combines the proportional reasoning involved in diluting liquids, an action required to determine the concentrations of chemical substances (Bakker, Groenveld, Wijers, Akkerman, & Gravemeijer, 2014). In this tool, students can simulate dilution and must compute dilution factors before they can move on. Brief interventions of about 90 minutes in the first year of secondary vocational laboratory education proved to increase their proportional reasoning in this context efficiently and effectively. This research suggests it is possible to tailor-make learning environments, for example in the form of computer tools that help to develop mathematical knowledge required in occupations.

The second example concerns a boundary-crossing approach to developing statistical knowledge required in laboratory work (Bakker & Akkerman, 2014). Interns in hospital laboratories were assisted during release days back at school in integrating the statistical knowledge learned at school with the work-related knowledge involved in a common task given to interns: comparing measurement methods. The statistical and work-related knowledge were initially poorly developed in students, and separated. In five one-hour meetings, however, they were stimulated to ask questions about a report of a former student doing something similar; they asked these questions to workplace supervisors who visited one meeting at school, and they investigated how statistics were used in their own laboratories. The case study shows that it is possible for vocational students to expand and integrate different knowledge types in a relatively short time. Such an approach seems to help students to recontextualise the mathematical or statistical knowledge learned at school in their workplaces.

However, to what extent educational materials for mathematics need to be tailor-made to specific occupations remains unanswered. Hoyles et al. (2010) have developed computer tools that are very situated and tools that were more general, but did not evaluate their relative merits. Generally speaking, students seem to appreciate learning mathematical topics when they see the point of learning it for their future occupations. However, it is impossible, and not very efficient, to develop all specific applications of mathematics in future occupations. Hence, typical examples at a somewhat general level seem to be necessary for students who may not immediately warm up to learning mathematics.

### **8.3.4 Dutch Language**

Just like in the case of mathematics, the language component of occupational knowledge is addressed in vocational curricula, but most of the time very implicitly. This might sound a bit paradoxical as language is the instrument to learn and expresses the vocabulary of an occupation. The issue at stake is how explicit this



expression is taught bearing in mind the previous mentioned notion by Young (2008) that the disciplinary basis of occupational knowledge should be understood by students in order to be able to fully use this knowledge in occupational practice. Learning the vocabulary of an occupation and the communication modes used within the occupational community, thus also implies acquiring the fundamentals of (Dutch) language.

In a review on Dutch language in vocational education Elbers (2012) defines the language component of occupations to be both the specific and specialised terminology and argumentation in which occupational knowledge is expressed and the daily ways and contents of communication in the workplace. First he refers to academic language use following Schleppegrell and others (cited in Elbers, pp. 95–96) to differentiate it from informal language use. The latter, i.e., daily ways and contents of communication in the workplace refer to the situational, embodied and distributed language aspect of occupational knowledge. Theory and research on academic language use also point to the concept of genre which relates to the nature of a social event and goal. Genres have their own specific linguistic codes. This might account for events in occupational settings too. The idea is to learn to recognise these genres and apply them appropriately.

In his review Elbers (2012) states that language is an important tool of a fully equipped professional and consequently he underlines the statement that each lesson or assignment is always also a language class. A leading theory he refers to is the systematic functional linguistics approach which has as its starting point the relation between language and contents. People use language to create meaning in their lives and at work. Therefore developing knowledge is at the same time expanding one's linguistics repertoires. For the positioning of occupational knowledge this theory might therefore be extremely relevant.

In Dutch design research and curriculum development this perspective on language in relation to occupational knowledge is theorised and applied but foremost from the angle of the positioning of teaching language (Elbers, 2012; Neuvel et al., 2004; Raaphorst & Steehouder, 2010). In syllabi, assignments and also assessments of the linguistics of occupational knowledge, either the academic use and genres or the situated communication, are not explicated or assessed. In the first decade of the century a popular concept for practice in MBO was the three step model comprising (1) learning linguistics in placements and occupation related projects and classes; (2) supportive classes that explicitly focus on grammar, spelling and style; (3) individual practicing and remediation. Research showed that most vocational schools were not able to put this model in practice; in particular the first step is hardly present (Raaphorst & Steehouder, 2010; Van Knippenberg, 2010). A major difficulty is that there is no explication of the linguistics in occupational knowledge themselves in the curriculum and teachers of occupation related projects and classes do not systematically and explicitly pay attention to it.

Also in HBO curricula the linguistics of occupational knowledge are not explicitly formulated. However, the issue is recognised and mostly referred to as domain specific conceptual understanding pointing out the relevance of both academic

expressions of occupational knowledge and the daily modes and contents of communication in the field (cf., Ashley, Schaap, & De Bruijn, 2013).

Raaphorst (2007) used the concept of 'situated action' which refers to a coherent set of activities that are part of a task, to define occupation related instrumental, linguistic and communicative actions. These differentiated actions were the starting point to develop the curriculum and in particular the horizontal delineation of subjects and themes. Other recent examples of practice in MBO show the possibility of paying attention to the linguistics of occupational knowledge, both the academic and the communication modes (Hendrix, Hovens, & Kappers, 2012). For foreign languages, in particular English, as part of occupational knowledge we see examples and discussions that are comparable (Van Kleef et al., 2007). The central issue at the curriculum level remains how to delineate the linguistics of occupational practice and where to draw the line avoiding it becoming grammar, spelling and style as such. As for teaching a major difficulty is that teachers are not fully equipped to teach these linguistics, both the language teachers and the teachers of occupation related subjects and skills.

## 8.4 Conclusions

In this contribution we aimed to give an impression of the debate and practice of the role and nature of knowledge in vocational programmes. We specified the central issue of occupational knowledge which has a diverse and complicated nature. The nature of occupational knowledge is both implicit and explicit but also social and individual as we defined in the first section of this chapter. Furthermore, occupational knowledge comprises two types of knowledge. The first type is codified knowledge that is related to disciplinary knowledge such as language and mathematics but also mechanics, physiology, nutrition, economy, et cetera. Occupational knowledge thus includes the specific manifestations of this disciplinary knowledge. The second type of occupational knowledge refers to distributed and embodied knowledge that can be partly explicated in procedures.

Given the multi-dimensional and diverse nature of occupational knowledge, it is far from easy to define, delineate and arrange this knowledge in terms of curriculum contents. At the same time, it is evidently a rather crucial part of developing vocational education that prepares for occupational practice, in particular in the current knowledge society and economy. It is therefore fairly striking that the positioning of occupational knowledge in the vocational curriculum is both under-researched and under-theorised, at least in the Netherlands. Although we marked a kind of pendulum swing at the political level and public debate between extreme positions of dealing with knowledge in vocational education, this movement is hardly reflected in research and theory. We might conclude there is only little research that addresses this issue both empirically and fundamentally, notwithstanding the interesting examples we did come across.

From the research we discussed we might additionally conclude that also in practice the positioning of occupational knowledge in vocational curricula is currently no prominent issue. After the period of more or less neglecting occupational knowledge in the curriculum in favour of attention to skills and performance, explicit attention to occupational knowledge seems to still be minor. Most attention is on general knowledge such as language and mathematics. The explicit attention for general knowledge leads to a stronger focus on occupational knowledge too, but at the same time the focus decreases in terms of roster time. The examples we discussed in the third section showed possibilities of explicit attention to occupational knowledge in the vocational curriculum. The concept of ‘situated action’ referring to a coherent set of activities that are part of a task is promising as a way of unravelling actions that relate to various types of knowledge, both disciplinary and situated. The example of mathematics showed that it is possible to explicate fundamentals of disciplinary knowledge to teach and at the same time its manifestation in occupational knowledge. The various logics that are relevant for the development of the vocational curriculum offer a framework to define, delineate and arrange parts of occupational knowledge and its related disciplines. The example of developing personal meaning by discussing vocational core problems in groups comprising participants with different perspectives, shows the possibility of engagement with embodied knowledge. The examples also show the difficulties and dilemmas in doing so. Thus now as the pendulum swing tries to reach its equilibrium, much effort must be undertaken both from practice and research to find fruitful ways to position occupational knowledge firmly in the vocational curriculum.

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# Chapter 9

## Designing Competence-Based Vocational Curricula at the School-Work Boundary

Renate Wesselink and Ilya Zitter

### 9.1 Introduction

A shift has taken place from education based on knowledge transfer towards education that takes learning outcomes (i.e. competencies) as a starting point (Cedefop, 2009; Wesselink, 2010). Learning outcomes can be defined as statements of what a learner knows and understands and is able to do after completion of learning trajectories. In many countries these learning outcomes are labelled ‘competencies’. According to an international overview, in the Netherlands a competence is seen as ‘the ability to successfully meet complex demands in a particular context through the mobilisation of psychosocial prerequisites’ (Rychen & Salganic, 2003, cited in Cedefop, 2009, p. 13); this could be considered a ‘holistic approach’ according to Biemans, Nieuwenhuis, Poell, Mulder, and Wesselink (2004) and Winterton, Delamare-Le Deist, and Stringfellow (2006). In 1999, the advisory committee on education and the labour market (ACOA) of the Netherlands published a proposal entitled ‘The shift towards core competencies’ (ACOA, 1999), signalling a change of emphasis towards competencies – as opposed to academic disciplines (e.g. maths, history or science) – as a starting point for the design of VET programmes (Mulder, Weigel, & Collins, 2007). Learning programmes that are designed this way are collectively known as competence-based education (CBE). An important factor in

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CBE's popularity is the expectation, held by many VET stakeholders, that its introduction could close the gap between education and the workplace (Biemans et al., 2004). It is expected that VET graduates will experience less teething problems when starting work, having already enjoyed professional practice experience and having developed competencies (Velde, 1999). Said competencies are relevant when dealing with increasingly complex environments which are characterized by ill-defined problems, contradictory information, informal collaboration, and dynamic and highly integrated processes (Cremers, Wals, Wesselink, Nieveen, & Mulder, 2014; Kirschner, Van Vilsteren, Hummel, & Wigman, 1997).

In this chapter, CBE will be studied with respect to the 'curriculum', which can be defined as a 'plan for learning' (Van den Akker, 2003), and it will offer a review of what competence-based education entails; from the design of a competence-based curriculum (intended), to the interpretations of these curricula by stakeholders (implemented), and the actual outcomes of these curricula (attained). Most of the research presented in this chapter deals with either the intended or the implemented curriculum, since attained curricula are not yet widely studied across the different domains of VET (see Van den Berg & De Bruijn, 2009). VET-institutes are working on extensive programmes for CBE development and implementation, so CBE is work in progress, but said programmes need to be redesigned in their entirety before their effects can be measured (Van den Berg & De Bruijn, 2009). Although that statement hails from 2009, to the best of our knowledge, it still holds true. The peer reviewed research results available to us only include specific parts of CBE (e.g. assessment, see Baartman & Gulikers, 2017) or lie outside the domain of vocational education (e.g. medical education). In VET studies, the effects of fully implemented CBE have either not been studied widely or study results remain unpublished as yet.

This chapter then continues with a brief historical overview of the rise of CBE in the Netherlands, followed by a review of current practices and research on the status quo of CBE in Dutch VET. The review utilizes peer-reviewed research papers as well as more practical, so-called 'grey publications'.

## 9.2 CBE in The Netherlands: A Brief Historical Overview

There has been a growing emphasis on work-based learning in the Netherlands since the early 1990s. This came about as a response to criticism that VET-institutes offering three to four year fulltime vocational education,<sup>1</sup> insufficiently prepared students for the workplace (Brandsma, Noonan, & Westphalen, 2000; Brockmann, Clarke, & Winch, 2008; Cedefop, 2009). Young people were affected most, as their migration into the workforce was hindered by a lack of workplace experience and a failing to meet new work requirements. The fulltime vocational courses within the Dutch VET-system were considered too 'academic' and 'not realistic' (Cedefop, 2010).

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<sup>1</sup>Vocational education at level 4/5 of the European Qualification Framework.

In 1996, the Education and Vocational Schooling Act (*Wet Educatie en Beroepsonderwijs, WEB*) passed into law (Cedefop, 2012) and one of the act's focal points was integrating the apprenticeship system into the formal educational system. All students, either in apprenticeship courses or in fulltime education, should have a curriculum of which 20–60% was spent in the workplace. The WEB was also significant because it marked the shift towards a qualification system that was based more on outcomes and placed a bigger emphasis on the demands of the labour market (Mulder et al., 2007). Despite these efforts, national institutes like the Social and Economic Council of the Netherlands and the Advisory Committee Education and Labour Market published reports (in 1997 and 1998 respectively) which reignited discussion about the desired connection between education and the labour market (De Vries, 2009). In sum, the overabundance of qualifications (over 700), and the inability of vocational institutes in responding rapidly to labour market changes (Eurydice, 2006) were driving factors for the development of a renewed competence-based qualifications framework.

As a result of said complaints, the number of qualification structures in the Netherlands was significantly reduced. However, the process of developing outcome-based qualifications was far from smooth, the resulting qualifications were criticised as being too specified and narrow for example. There was also criticism that the qualifications were not paying enough attention to more generic competencies and focused too much on technical-instrumental competencies (De Vries, 2009), resulting in a drop in the number of graduations to higher education (Nijhof & Van Esch, 2004). Many of the issues stemmed from start-up problems often inherent to such a large, system-wide reform. Nijhof and Van Esch argue, based on earlier experiences with large systemic change, that it takes time for participants and stakeholders to become familiar with new roles and new relationships and develop the knowledge and skills to handle them.

As to reducing the number of qualifications, in 2012–2013 there were 612 specific qualifications, which were clustered into 237 broader qualification structures (Van der Meijden, Van den Berg, & Róman, 2013). These qualification structures define and map 25 competencies with learning outcomes based on work tasks and processes (Cedefop, 2012). The first experiments with this competence-based qualifications framework took place between 2004 and 2009. The original plan was to introduce this framework through legislation in 2009 but its implementation was postponed, first to 2010, then to 2011 and finally to 2012, because not all VET institutes were equipped to handle its introduction up to that point (De Vries, 2009). In fact, in 2004/2005 only 2% of VET-institutes experimented with the competence-based qualification structure, expanding to 73% in the following four years (Van der Meijden, 2011). As of 2012, every VET programme in the Netherlands is required to use the competence-based qualification structure as the starting point for curriculum design. In late 2011, it was announced that the competence-based qualification framework was to be renamed vocation-based qualification structures, reflecting a shift in emphasis towards vocationally specific knowledge and skills (Cedefop, 2012). In the period 2004–2010 VET institutes were offered the opportunity to start implementing the newly developed competence-based qualification structures.

Efforts for a further reduction in the number of qualification structures are taken (Bussemaker, 2014a, 2014b). In the beginning of 2015 the Minister of Education approved a new set of qualification structures, containing only 168 qualifications. Besides this reduction, another major change was proposed. The qualification structures are enriched with optional modules. A student can choose between several modules and these are additional to the core qualification structure. This change has the aim to enrich the educational programme of students.

It should be noted that the content of the qualifications framework (the ‘what’) is determined at the national level, but as to *how* VET-institutes design their curricula to actually enable students to develop competencies is up to the VET-institutes. Competence-based qualification structures do not represent a teaching method, they only determine the outcomes of the curricula. VET-institutes themselves are responsible for redesigning their curricula so as to realize said outcomes and CBE therefore lacks a national standard. The absence of a clear standard for, or a shared definition of, CBE makes it difficult to assess whether VET-institutes actually enable students to develop competencies as opposed to just acquiring knowledge and skills. However, VET-institutes might already apply teaching practices and methods that are compatible with CBE without referring to it as such (Biemans et al., 2004). This is why some VET-institutes were forced to redesign their whole curriculum to conform to competencies, while others have had to adjust their programmes only to a small extent. These differences make it difficult or even impossible to say anything about the ‘general level of CBE’ in the Netherlands (Van der Meijden et al., 2013).

Although the VET-institutes are responsible for the ‘how’ of CBE, they did not perceive ownership in all cases. Moreover, policy-based research from Schuit, Kennis, and Hövels (2009) made explicit that within the current qualification structure, VET-institutes did not perceive much leeway with regards to the development of their own curricula. Because of the level of detail the structure provided, the institutes felt they had little room to manoeuvre when (re)designing their curricula.

Furthermore, the way in which the government chose to introduce the new procedures proved problematic. The government decreed that every educational programme was obliged to work with competencies from 2009 on (which was ultimately postponed to 2012). The government, however, did not wait to see whether the experiments with CBE – which took place at different VET-institutes – actually yielded the desired results (De Vries, 2009). So VET-institutes had to start developing CBE, and accommodate competencies in their curricula, without clear evidence for the added value of either competencies as learning outcomes or CBE.

As a consequence of the confusion about CBE among researchers (at a conceptual level) and practitioners (e.g. What is it? Does it work?) (Stoof, Martens, Van Merriënboer, & Bastiaens, 2002), considerable differences exist in the design of competence-based curricula (Van den Berg & De Bruijn, 2009). Several scholars (Sturing, Biemans, Mulder, & De Bruijn, 2011; Wesselink, Biemans, Mulder, & Van den Elsen, 2007) developed theoretical frameworks, with Dutch VET as starting point, to clarify what CBE could or should entail; one example being a model called Comprehensive CBE (CCBE, Sturing et al., 2011; Wesselink et al., 2007). This model integrates principles concerning (1) the curriculum and specifications of the

study programme; (2) the way instruction takes place and the teacher's role; (3) the assessment procedure; and, (4) the student's career competencies. A framework for CBE was also defined on the policy level: (1) integration of knowledge, skills, and attitude; (2) orientation on acting (in the domain of the profession); (3) focus on the individual; and, (4) focus on the development of the individuals' career (Inspectorate, 2009). These models concern the intended curricula and, in relation to their implementation, Sturing et al. (2011) evaluated the extent to which VET-teachers perceived how these elements differed in importance when realizing CBE. The teachers found it difficult to make a distinction as to their importance, because they shared a belief that all elements of CBE were of equal importance. In the remainder of this chapter we will take a closer look at CBE in Dutch VET and pay specific attention to the curriculum perspective.

### 9.3 Review CBE in Dutch VET Curricula

In 2007, three out of ten educational programmes considered their curriculum as being competence-based. These curricula shared the following characteristics (Inspectorate, 2009):

- Diversity in the teaching methods, resulting in 'hybrid' learning environments. Classic frontal instruction was alternated more often with: integral assignments, project work, self-study, and practice-based learning, inside as well as outside the school.
- Stronger ties between the programme and the (regional) labour market. These connections were realized mainly through the incorporation of practical, authentic assignments (from relevant regional business organisations) and through closer cooperation with the apprenticeship companies.
- Adjustability and flexibility of the programme.

As stated before; in the period between 2006 and 2009, VET-institutes in the Netherlands started experimenting with the new competence-based qualification structure. These experiments were monitored by Van der Meijden and colleagues; they published several reports, but only two related to the curriculum level. The other reports (e.g. Baarda, 2006; Van der Meijden, 2007, 2011) concentrated mainly on the student (students leaving VET-institutes, motivation of students, etc.). The results of those studies are mainly beyond the scope of this chapter; however, the results presented in 2009 and 2010 are relevant to this chapter. These reports yielded the following set of features which, according to the participants, contributed to positive effects of CBE:

- Suitable integrative assignments
- Contextual learning: learning professional knowledge and skills in context
- Differentiation; tailor-made instruction
- Appropriate collaborative learning and self-study

- A clearly structured curriculum
- Transparent organisation of the apprenticeship training period
- Training and development for supervisors/assessors at the workplace
- Structured career guidance with attention to personal development
- Sufficient preparation for lifelong learning.

The following three points of critique were formulated by the Inspectorate (2009) in relation to curricula that could be considered competence based. In the first place, the thoroughness of content and knowledge should remain one of the focal points. Especially according to workplace training supervisors, student knowledge was not thorough enough, and students did not sufficiently develop professional skills. In the second place, relationships with workplace organisations should be improved; communication especially was seen as one of the bottle necks. This was also signalled by Wesselink, De Jong, and Biemans (2010). They studied the three-way communication between students, VET-institute teachers, and workplace training supervisors in the context of CBE. Their case studies lead to the conclusion that it is mainly the case that mutual expectations about who has to do what that have to be articulated more clearly. Nevertheless, in general, students are satisfied with the content of the curriculum in relation to their needs in vocational practice (Inspectorate, 2009); they were able to apply what they learned in the educational setting in practice. Lastly, more attention should be paid to the overall structure of educational programmes. Although the programmes are flexible only to a limited extent, students especially do not perceive the structure of educational programmes as being clear enough. The content of the programmes is determined in large part by the qualifications profiles and only 32% of the programmes (according to the Dutch Inspectorate study) explicitly espouse to take demands of local parties (regional organisations) into account. To add to that, only 29% of the programmes took students' wishes and desires into account. As to the adjustability of the programmes, students reported that they were able to request additional theoretical lessons or workshops in only 10% of cases. And in just 16% of cases it was reported that the more general subjects (like Dutch or foreign languages) were aligned with the (authentic) assignments, as they were supposed to.

The results of De Bruijn and Leeman in 2011 show a similar picture. They published a study on Dutch VET programmes which took 'powerful learning environments' as the starting point for data collection; it analysed the state of affairs, dilemmas and practical tensions surrounding their implementation. Just like learning environments in CBE, powerful learning environments are based on (social) constructivist learning theories (Wesselink, 2010). The educational programmes in the De Bruijn and Leemans study could be characterised as slightly powerful; on a scale from 1 to 4 the mean score was a fraction above 2. Only three out of eleven study programmes scored over 2.5. The aspects 'adaptive instruction' and 'vocational identity' scored relatively high in comparison, leading De Bruijn and Leeman (2011) to offer the explanation that said aspects are more easily incorporated into a more traditional curriculum. Aspects like 'coaching' and 'learning by reflection' scored relatively low, only a few of the educational programmes actually

incorporated ‘reflection on results and on the learning process’ and in only a few cases could the teaching style be typified as ‘coaching’. A combination of authentic learning and self-directed learning was only encountered in a handful of cases (De Bruijn & Leeman, 2011). In sum, VET-institutes are making progress with the implementation of CBE or other developments based on (social) constructivist learning theories. However, one would have expected to have seen more progress in the years past.

We have shown you characteristics of CBE, positive points, and pointers for the improvement of CBE. But, as mentioned before, we have not been able to share many results on attained curricula. Because of the extensive and ongoing efforts in implementing a certain level of CBE, VET-institutes are not willing or ready to participate in CBE research yet. Consequently, researchers were not able to evaluate CBE outcomes (e.g. more competent and motivated students). The difficulties in CBE implementation are dealt with in the next section.

## 9.4 CBE and Its Difficulties

VET-institutes started working with CBE enthusiastically; however, the transition towards CBE has not been a case of smooth sailing. Implementing CBE calls for changes that affect many components of educational systems. To name just a few: curriculum design, and enacting said curriculum within schools and work placements (Jonnaert, Masciotra, Barrette, Morel, & Mane, 2007). Biemans et al. (2004) summarised the most important pitfalls in CBE implementation on the basis of several applied studies in Dutch VET-institutes. In 2009, roughly the same authors (Biemans et al., 2009) continued this work. This section discusses these pitfalls (Biemans et al., 2004, 2009) which cover pedagogical, conceptual and cultural problems. These can be seen as the central problems complicating Dutch VET and are probably partly to blame for the delay in implementing CBE to its full extent.

1. *The concept of competence.* As early as 2002, Stoof et al. (2002) carried out a study for the Educational Council of the Netherlands in order to clarify the concepts of ‘competence’ and ‘competency’. There is still little consensus among researchers on what these concepts mean. The same goes for the educational practice field; students, teachers, instructors, and workplace training supervisors perceive and experience CBE in different ways (Biemans et al., 2009). This ambiguity offers teachers and educational designers room for replacing existing labels (e.g. knowledge, skills) with more contemporary labels – such as competence – while bringing about very little actual change in educational practice (Wesselink, Dekker-Groen, Biemans, & Mulder, 2010). This gives rise to questions as to whether CBE is actually being realized and to what extent daily practice in VET-institutes is really changing. An increasing sense of urgency with regard to reaching more conceptual consensus is therefore felt in educational practice; that is why discussions were set up, both at national and local institutional levels, to achieve this goal.



2. *Standardisation.* Using overly standardised competencies misses the point of CBE (Biemans et al., 2004), since every abstraction that diverts from actual practice makes competencies less applicable and recognisable for students. Although the whole point of the nationally approved qualifications framework is labour market exchange value, it is important for VET-institutes to remain in tune with specific (regional) workplace contexts. Teacher teams play an important role in striking a balance between national standards and the local labour market. Biemans et al. (2009) reported that both teachers and workplace training supervisors (representing professional practice) agree that current educational programmes are more aligned with present and future professional practice than before, although there is still room for improvement.
3. *School and workplace learning.* It cannot be underestimated how hard it is to integrate in-school learning with learning in the workplace (Wesselink et al., 2010; Zitter & Hoeve, 2012). However, the distinction between the two settings should be reconsidered. Based on studying the three main stakeholders of VET internships (i.e. students, teachers and workplace training supervisors), Wesselink et al. (2010) conclude that said stakeholders recognise the growing attention being paid to workplace learning and are convinced of its added value. Problems and questions put forward all related to ‘how’ workplace learning could support the learning process and not ‘whether’ workplace learning should be part of the curriculum. It should be noted, however, that all three stakeholder groups have different conceptions of learning and that there is a lack of agreement on the division of responsibilities for workplace learning. These aspects need to be improved in order to be able to take more advantage of learning in the workplace (Wesselink et al., 2010).
4. *Determining learning activities.* Translating competence-based learning goals into actual learning activities is crucial to implementing CBE. If implementation gets stuck in the preparation phase, and/or does not advance to the execution phase, true innovation will fail (Biemans et al., 2004). Students should be made aware of their competencies and ways of learning, but this requires different approaches in both workplace and school settings. Actual learning activities should, as much as possible, be interdisciplinary and take place in authentic situations. Biemans et al. (2009) showed that Life Sciences VET-institutes have made considerable strides in designing, developing, and implementing new competence-based learning activities and assessments based on critical job situations, in order to support and connect learning and assessment in school and workplace alike. Where, in the beginning, these assignments were derived directly from traditional learning materials, VET-institutes nowadays are increasingly using authentic assignments provided by one or more regional parties (e.g. local government, farmers, or research institutes) as building blocks for their educational programme (Oonk, Beers, & Wesselink, 2013).
5. *Assessment of competencies.* Assessments are hard to standardise; the dichotomy between national standards and local flexibility forms a pressing dilemma (cf. Nieuwenhuis, Van Berkel, Jellema, & Mulder, 2001). Without going into too much detail with regard to assessment, as another chapter in this book deals with competence-based assessment, it can be said that important steps have been



taken. Many promising new competence-based assessments have been developed and implemented, consisting of various assessment methods like observation and criterion-based interview (see for example Gulikers, Baartman, & Biemans, 2010).

6. *Changing teacher roles and identity.* In CBE, the role of the educator also incorporates the role of coach: guiding students' learning processes, as opposed to merely enacting the role of expert and imparting knowledge to students. Students must gradually take responsibility for their own learning process, whereas the educator has to provide the necessary support and scaffolding accordingly. This process requires a different attitude from both parties involved and could perhaps even be considered a paradigm shift. In this regard, Biemans et al. (2009) showed that the students' need for autonomy and self-regulation appears to increase as they become more adept at independent learning.
7. *Conditions at institutional level.* In developing CBE, it is essential that structural attention is paid to the competence development of teachers and school managers. Biemans et al. (2009) showed teachers experiencing CBE implementation which was insufficiently facilitated by school management. Research by CBE consultant McDaniel (2012), initiated by collaborating VET-institutes, showed that a large proportion of teachers does not feel fully competent to work in CBE. In teachers' perception, designing, developing, and implementing CBE puts a lot of strain on their time schedule and it is up to school management to facilitate the process properly.

Although all the difficulties mentioned above are a hindrance to smooth CBE implementation, the pitfall of connecting learning in schools with workplace learning can be considered as the one that strikes at the heart of implementing CBE in VET curricula; true innovation will not take place if nothing changes at this level, according to Biemans et al. (2004). Therefore, the remainder of this chapter will focus on the relationship between in-school learning and learning through practice.

## 9.5 The School-Work Boundary

Learning through practice is one of the distinguishing characteristics (and difficulties) of CBE and manifests itself in multiple ways, such as: problem-based learning, authentic assignments, hands-on simulations, workplace simulations, projects, and other forms to foster learning in authentic contexts. These forms cross the traditional boundary between school and the workplace; to show the complexity of crossing them, we adopt the theory of 'boundary crossing' (Akkerman & Bakker, 2011) which includes four learning mechanisms. These mechanisms are: identification, coordination, reflection, and transformation. The definitions of these four mechanisms are found below and include examples of how these mechanisms manifest themselves. These definitions and examples help shed more light on the complexity of crossing the school-work boundary and provide footholds for designing curricula, which have to cross these boundaries.

*Identification* is seen as learning the particularities of both sites in relation to one another (Akkerman & Bakker, 2011, 2012). School-based learning and work-based learning are useful for different purposes. In CBE curricula, work-based learning is considered part of preparatory rationality, which uses learning as preparation for work (Nieuwenhuis & Van Woerkom, 2007). School-based learning provides a safe environment that is more suited to knowledge acquisition and reflective processes. For example, Poortman, Illeris, and Nieuwenhuis (2011) show that work-based elements in curricula provide opportunities for applying theory to practice, allowing students to develop more practical skills. *Coordination* is seen as establishing cooperative and routinized exchanges between practices. For example, developing a protocol for the interaction between education and the workplace to help educational institutes and workplaces (business, governments or community organisations) collaborate more effectively in guiding students during workplace learning, (Blokhuys, 2006; Onstenk & Blokhuys, 2007). *Reflection* is seen as learning new things about a practice by viewing it from the perspective of the other practice. In a study on Dutch senior secondary vocational laboratory education (Akkerman & Bakker, 2012) this mechanism was deliberately triggered through bringing the workplace into the school by organising systematic visits from representatives from industry to the educational institute. The fourth and final mechanism is *transformation* and it is seen as changing practices in response to one another or creating a new in-between practice. Generally, bringing about cross links by designing learning environments that straddle traditional boundaries involves co-development by schools and professional workplaces. Below, insights into different practices of co-development are shared. These practices focus specifically on transformation, which is considered the most difficult mechanism when crossing boundaries.

## 9.6 Transformation: Review of Co-development Practices Between Educational Institutes and Workplaces

The co-development of new practices by VET-institutes and workplaces has taken flight in Dutch VET, with the aim of improving cross links between learning in VET-institutes and in workplaces. In 2002, the Dutch government introduced a national innovation programme for VET-institutes which will come to an end in 2015. Through this programme, projects could apply for government grants to fund experiments with innovative educational practices. One of the main goals of this programme was to stimulate collaboration between schools and professional practice/workplaces. The innovation projects were monitored by external researchers and during the latter years, representatives of the projects were required to carry out their own research (see for example De Bruijn, Hermanussen, & Van de Venne, 2008).

Smulders, Hoeve and Van der Meer (2012) carried out case study research on over 100 projects involved in this national innovation programme, ten of which were selected for an in-depth study. In these projects both VET-institutes and busi-

nesses were involved in the design and/or implementation of educational practices and this co-operation was structurally embedded within the organisations of these VET-institutes and companies. On the basis of this study, particular forms of co-development in Dutch VET were identified and the projects were classified as taking one of the following five forms.

1. **School at work.** This form of co-development is characterized by a long-term and intensive collaboration between a limited number of partners. This form provides an in-company work/learning environment for a group of students and is, for example, situated within a hospital or a nursing home. Supervision is provided mainly by senior workers in the workplace. In addition, teachers are frequently present at the workplace to guide students' critical reflection or provide just-in-time knowledge interludes.
2. **New entities.** This form is characterized by the collaboration between one or two VET-institutes and a small number of business partners. Both the VET-institutes and the business partners invest in the development of a new, stand-alone entity. The new entities provide a work/learning environment for individual students and/or groups of students. This learning environment also provides training opportunities for (groups of) employees of the business partners involved, or for other regional companies.
3. **Work at school.** This form is characterized by the collaboration between a VET-institute and a small number of business partners. It provides an attractive work environment situated on school grounds, explicitly interweaving more formal learning processes with workplace learning.
4. **Temporary projects.** This form is characterized by VET-institutes and business partners collaborating on temporary projects. The business partners are clients of the projects. These projects are carried out by individual students or student project teams. These projects can involve single or multiple disciplines or professions. This form creates regional networks of schools and (small) firms that can serve as a vehicle for regional knowledge development in support of economic growth.
5. **Sector Councils for VET.**<sup>2</sup> This form is characterized by the central role of national Sector Councils for VET. They coordinate the collaboration between VET-institutes and business partners, both on regional and national levels. The Sector Councils invest in the development of work/learning environments situated at VET-institutes in the different regions or at a central location. By operating on a national level, the Sector Councils can create economies of scale through joint investment in technology, sharing of work space and providing access to large business networks.

The five forms above showcase the diversity of the co-development types emerging in the Netherlands over the last decade.

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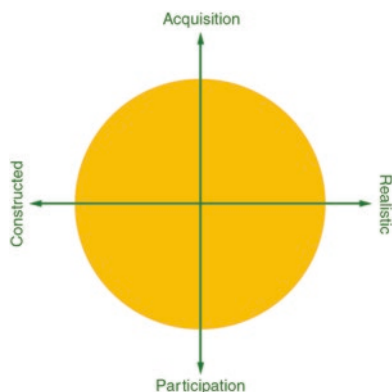
<sup>2</sup>It should be noted that as a result of severe budget cuts (Coalition Rutte II, 2012) the Sector Councils are being reorganised. From August 2015 on, the 17 Sector Councils will form one collaborative organisation.

## 9.7 Transformation: Review of Learning Environments at the Intersection of School and Work

As reviewed above, new practices combining school-based learning and learning in practice have emerged during the last decade. We will now introduce a design model which will aid us in reviewing practices at the intersection of school and work in more detail. Where the above theory of boundary crossing and the five forms of co-development were used to illustrate the complexity and current co-development practices at the institutional level, the level of business–education partnerships, this new model helps us take a look *inside* learning environments that are the result of such co-development efforts. This model was developed in the context of higher vocational education (Zitter, 2010; Zitter, De Bruijn, Simons, & Ten Cate, 2011, 2012; Zitter, Kinkhorst, Simons, & Ten Cate, 2009) and further development took place in senior secondary vocational education (Zitter & Hoeve, 2012).

This model consists of two dimensions (see Fig. 9.1): (1) Acquisition-Participation and (2) Constructed-Realistic. The first dimension has on one side the knowledge acquisition metaphor, in which knowledge is considered a commodity that can be acquired, transferred and shared with others. On the other side is the participation metaphor, characterising the learning process of individual learners as one of becoming a member of a professional community (Sfard, 1998). This dimension addresses the type of learning process and its intended learning outcomes. The second dimension constructed-realistic is there to characterise the conditions under which learning takes place. Constructed conditions are characterised as low-fidelity, here rich reality is absent or at best simulated. Conditions become more high-fidelity when moving towards the realistic-side of this dimension; for example by involving simulation technology, internal employees, or outside actors to enact roles like client or patient. Moving to the right-hand side of the dimension, conditions closely mirror the real professional context. Under such conditions learners are immersed in actual working life. The combined result of these two dimensions falls in one of four quadrants, each with specific types of learning/working settings.

**Fig. 9.1** Two dimensions of competence-based learning environments



Learning activities from all four quadrants can be distinguished within Dutch VET. The Inspectorate (2009) report shows a number of forms in which the connectivity between VET-institute and practice manifests itself. The following were distinguished (the brackets give the percentage of participants that said they utilised this form in 2009): guest lecturers from practice (79%), positioned in the realistic-acquisition quadrant. It is immediately apparent that guest lecturers are utilised quite often, although it must be said that settings with guest lecturers do not really allow students to practice and develop competencies in authentic situations. Other forms are simulations (66%), students working on authentic assignments within educational institutes (41%), students working on authentic assignments in companies (56%), students working for 'in-school companies' (36%) and students working in so-called mini-enterprises (20%). The latter forms can be positioned in the participation quadrants, along the constructed-realistic dimension.

## 9.8 'Acquisition' in Dutch VET

Settings in the upper quadrants (constructed-acquisition and realistic-acquisition) focus on acquiring knowledge, vocational as well as generic (e.g. languages and mathematics). In the chapter by De Bruijn and Bakker, a pendulum swing was observed between an emphasis on knowledge in the form of school subjects and an approach which stresses skills and attitudes. As stated before, the sector is now searching for an equilibrium between the upper, acquisition quadrants and the lower, participation quadrants. This search for balance is exemplified by a review study (Elbers, 2012) on the integration of vocational and language education, which combines language learning with vocational competencies in some form or another. From a curriculum perspective, it is interesting to note that in the review different forms of integrating generic and vocational elements were showcased; such as the use of vocational texts for language development, and using experiences from workplaces as input during language lessons. It should be noted that the search for balance cited above takes place in a policy climate that hinders the finding of said balance, owing to the fact that the ministerial action plan 'Focus on vocations 2011–2015' (Bijsterveldt-Vliegenthart, 2011) puts increasing emphasis on languages and mathematics.

For example, 'development portfolios' can be positioned in the upper right-hand corner (realistic-acquisition). A development portfolio refers to an instrument students use to describe and document multiple aspects of their own professional development over time. Research at a 3-year hairdressing program in a VET institution showed that combining a 'whole task approach' (comparable to 'vocational core problem') in which the learning tasks vary in complexity, authenticity, and amount of given support (Van Merriënboer & Kirschner, 2007) with a development portfolio (aiding students in taking responsibility for their own learning process) yielded a promising approach for the improvement of their self-directedness.

This approach helps students formulate directions for future learning which enhances the quality of their deliberate practice (Kicken, Brand-Gruwel, Van Merriënboer, & Slot, 2009).

## 9.9 ‘Participation’ in Dutch VET

Innovation and research tend to focus on the lower (participation) quadrants, in line with the identified core difficulty of connecting learning in schools to workplace learning. Longitudinal monitoring shows that Dutch VET is characterized by students working on integral assignments, or projects focussed on learning how to carry out core vocational tasks and work processes (Van der Meijden, 2007). In addition, hands-on simulations are used in vocational oriented curricula for creating meaningful, occupation-related learning experiences (Khaled, Gulikers, Biemans, & Mulder, 2014). A similar concept is ‘workplace simulations’: authentic practice-oriented learning environments which integrate traditional vocational skills, generic skills, and domain knowledge (Jossberger, Brand-Gruwel, Boshuizen, & Van de Wiel, 2010).

‘Pure’ workplace learning can be positioned at the far end of the lower, right-hand quadrant (realistic-participation). The education of individual students in actual, real-life, workplaces is discussed in another chapter. Practice learning of a more constructed nature which is also interwoven with learning characterized as acquisition, will be discussed in the remainder of this chapter.

## 9.10 Hybrid Learning Environments in VET

Up to this point, the model above was applied as framework for reviewing all kinds of initiatives in Dutch VET curricula. The remainder of this chapter will substantiate the hybrid learning concept by means of one of the educational innovation case studies combined with research carried out on Dutch VET (Zitter & Hoeve, 2012). Part of a curriculum can be considered a ‘hybrid learning environment’ when “*different formal and informal elements are woven together into coherent programmes of learning and into single learning environments, rather than a programme that combines different components with the aim of offering a more enticing menu of learning for the students*” (Zitter & Hoeve, 2012 as cited in OECD, 2013, pp. 138).

In the Netherlands, research was carried out to identify emerging practices and make an in-depth study of hybrid learning environments (Huisman, De Bruijn, Baartman, Zitter, & Aalsma 2010; Zitter & Hoeve, 2012). On that basis we would like to present the Water Factory case study. The Water Factory is situated within the grounds of a VET-institute providing senior secondary vocational education (14,000 students). This learning environment offers five study programs in (senior) secondary vocational education, three in process technology and two in marketing and sales.

**Fig. 9.2** Four quadrants/  
hybrid nature of the Water  
Factory



The modality of co-development at the Water Factory can be characterized as ‘work at school’. The environment is situated on school grounds.

The Water Factory is set up as an operational factory with a production line for the purification and bottling of water for external clients. In order to market and sell the water in bottles with custom designed labels, there is a marketing and sales department. The description will focus on the production line, which mirrors the production line of the national brewer involved. The hybrid nature is demonstrated, for example, by the fact that production takes more time than is strictly necessary. This stems from the fact that more supervision is provided when needed and step-by-step instructions are given when work is done on the production line. For an even more constructed situation, there are rooms on the left (see Fig. 9.2) with simulation software for practicing with intricate parts of the production line. Moving to the acquisition-quadrants, an educator can halt the production line when a problem occurs. These breaks are used to engage a small group of students in a process of systematic, collaborative problem-solving (realistic-acquisition). The educator can also stop the production line and step out through the low gates and move to one of the tables equipped with computer screens fixed to the wall on the right. Stopping the production for a just-in-time knowledge intermezzo is an example of constructed-acquisition. The implemented curriculum is perceived as positive. First, the students



are enthusiastic about the way in which learning and working are connected. Second, teachers are able to observe students connecting theory and practice. Third, workplace training supervisors of the external workplaces where students carry out their apprenticeship trainings (afterwards, outside of the Water Factory) are satisfied with the competence level students develop through learning in the Water Factory (Aalsma, 2011). So, the Water Factory can be considered a promising ‘work at school’ co-development project. The dimensions of acquisition-participation and realistic-constructed offer possibilities to analyse (the effects of) the interventions that are taken to stimulate the students’ learning.

## 9.11 Conclusion and Discussion

VET-institutes and associated stakeholders in the Netherlands are, in general, certain of the added value of CBE. VET-institutes are putting a lot of effort in closing the gap between learning and working as this is one of the most challenging aspects of CBE. With the implementation of the WEB, a big step was taken on the national level to stimulate connections between in-school learning and workplace learning. As this chapter has shown, there are countless initiatives for closing gaps between the world of work and the world of learning.

Although research results are still scarce and as yet insufficient to convince people who are more critical of CBE, VET-institutes are making progress. The research efforts that have been made tend to lean towards conceptualizing (intended curriculum) and hardly offer any empirical foundation. Empirical studies of how curricula are perceived, how they work in action (implemented curriculum), and studies of learning outcomes (attained curriculum) of CBE are hard to find. Most research projects on a larger scale are still ongoing and understandably so, since VET involves so many different education levels and covers all industry sectors, from Life Sciences to the Technology Sector and Healthcare, to name just a few. Furthermore, implementing CBE takes a lot more time than anticipated. Due to a number of pitfalls in the implementation of CBE, its effectiveness can only really be assessed after the whole curriculum has been redesigned towards VET (De Bruijn & Leeman, 2011) and students have passed through the entire CBE programme. We expect to share large scale empirical results about the added value of CBE by 2018.

This chapter highlighted an important stumbling block and challenge for CBE implementation, namely how to interconnect learning in school with workplace learning in order to enhance the students’ learning process. Instead of considering schools and workplaces as opposites in need of reconciliation (or ‘integration’), taking the perspective of boundary-crossing shows us that *multiple* processes take place at the boundaries between education and workplace. This more nuanced perspective helps us to view the ongoing developments in VET taking place on either side of these boundaries, and particularly within the interspace of specific learning environments. Without a doubt, both school and workplace play their own unique role in VET and specifically in CBE. After reading this chapter, the lesson to be

drawn from this – both by researchers and practitioners – is that research and practice show us that interesting developments are taking place at the *intersections* of these worlds and that the design of the curriculum, design of learning environments, and the design of learning activities can foster the learning potential that these junctions provide.

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# Chapter 10

## Pedagogic Strategies for Improving Students' Engagement and Development

Truus Harms, Aimée Hoeve, and Peter den Boer

In this chapter we argue that apart from classic pedagogic strategies, such as teaching subjects to classes and having conversations with students about their study progress, contemporary Dutch vocational educators use three main pedagogical strategies, which include: (1) creating authentic learning environments, (2) creating flexible learning environments, and (3) creating environments that support students' self-direction. In this chapter, we show that over the last decades, institutes that provide vocational education and training in the Netherlands (ROCs) have put considerable effort into developing flexible learning arrangements in which authentic and self-directed learning are combined (De Bruijn et al., 2005). We give various examples to underpin this claim. Zitter and Hoeve (2012), however, have also shown that developing such learning arrangements is a complex task with models of authentic learning, self-directed learning, and flexible learning comprising broad conceptual models that give direction to ideals and schemes of thinking, rather than being applied in a selective and informed way. So, these models have not provided any guidelines for design and/or teaching practice, leaving therefore the challenge to use these concepts and to translate them from scratch into educational practice. Now, many ROCs have embraced this challenge. In their attempts to operationalise these concepts, ROCs were often facilitated by the so called National Innovation

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Programme (het Innovatiearrangement). In this chapter, we use, amongst others, the research that was conducted on these experimental programmes by Van der Meijden et al. (2009, 2013).

Flexibility and self-direction are the main strategies in modern Dutch VET.<sup>1</sup> In the following sections, we describe the efforts that have been made to translate these broad ideas into educational practice. Where possible, we draw on promising examples from the experiments in the National Innovation Programme. We note in advance, though, that these examples are not to be read as representations of the overall practice in Dutch VET. Much of daily practice is still a continuation of traditional pedagogics, in which the following methodologies still prevail: teaching subjects to classes from books; and doing practices from either teacher- or book-produced in-school assignments, based on the idea of “learning the basics.” Nevertheless, practice is changing, as stated above. So, identifying evidence on which standards can be set for pedagogic practice in vocational education in the Netherlands would still be too premature. We will elaborate on this issue in the concluding paragraph.

## 10.1 Pedagogical Strategies in Contemporary Dutch VET, A Brief Conceptual Analysis

The key question to be answered in this chapter is which pedagogical strategies Dutch vocational educators use, and what is known about their use and their effects on students. To address this question really requires an overarching pedagogical, theoretical framework of vocational education. Unfortunately, unlike Germany where “*Berufspagodik*” is a respected strand of educational science, Dutch vocational education lacks such an overarching theoretical discourse. Nevertheless, over the last few decades, some authors have started the debate in an effort to build one (Geurts, 2003; Geurts & Meijers, 2006, and recently De Bruijn, 2012). Key elements in their contributions are three topics that have turned out to be rather persistent over the last four decades. The first of these topics is workplace learning and its relationship or integration with in-school learning, which is usually called “authentic learning” or “learning in authentic environments.” The second topic concerns the degree of flexibility that students encounter when entering and passing through Dutch vocational education. The final topic concerns the degree of self-directedness that either is asked from the students or that is set as a preferred outcome of vocational education. One can view these three topics as cornerstones of pedagogical strategies-in-action in contemporary Dutch VET. The debate and research on these

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<sup>1</sup>In this chapter we will use “vocational education” and “VET” as synonyms, indicating both full-time vocational education tracks and apprenticeship tracks in the Netherlands, unless otherwise indicated.



topics primarily has concerned in-school vocational education (BOL), but on the side, it has also influenced pedagogical thinking about learning in apprenticeships (BBL). We will use these three topics as a frame of reference to advance the case in this chapter.

Before discussing how these three topics have been shaping pedagogical strategies in Dutch vocational education, we briefly examine how they serve the main goals of vocational education in the Netherlands. That is, contributing to the skilfulness of young people, to their continuation in (higher vocational) education and their citizenship capacities. Pedagogical strategies should be means to help achieve these goals. Designing an environment that is both authentic and flexible can be seen as such a strategy. Being a self-directed learner, however, can both be seen as a means of achieving these goals, or as a goal in its own right. Certainly, for being a starting craftsman on the labour market and a functioning citizen, self-directedness can be seen as an important requirement. Both employers and career coaches will consider workers who are not able to direct themselves both in their work and in their careers as less attractive. Various other authors (for instance Meijers, 2011; Trilling & Fadel, 2009) have mentioned these skills as a necessity to survive in the twenty-first century. Therefore, self-directedness should be seen as one of the goals vocational education should strive for. The question to be answered in this chapter then is thus: What pedagogical strategies achieve that goal? At the same time, though, self-directedness as a metacognitive skill should be considered a means in vocational education itself, leading to better achievements both in and outside of school. Some authors have used the term “self-regulation” instead of self-directedness when discussing metacognitive behaviour. Both perspectives will be discussed in this chapter.

In this chapter, we use the term “pedagogical strategies” as a broad concept. Pedagogical strategies are the result of deliberate considerations concerning how to shape learning environments, including teachers' roles and behaviours. These strategies precede and underpin teachers' actual behaviour in the learning context. Using this broad concept permits us to cover a range of strategies, including those regarding design aspects. These aspects are essential for the three main topics, or clusters, of pedagogical strategies that we have identified.

Although much can be said about the ways in which the various types of institutions that organise vocational education in the Netherlands have operationalised these three pedagogical strategies over the last four decades, in this chapter we will focus on the developments over the last 15–20 years, when the ROCs came into existence. In the following sections, we will describe these developments in the domains of authentic learning, flexibility, and self-directed learning. In the concluding paragraph, we will summarize the important lessons that can be drawn from the Dutch experiences considering these three topics, and we will reflect on their value as potential cornerstones of a developing, overarching pedagogical theory for Dutch VET.

## 10.2 Authentic Learning

On a first visit to the main building of ROC Nijmegen, visitors will probably be confused about whether they are entering a school building or a shopping mall. One passes a fitness centre, but also a bakery, a hairdresser, a lunch room, a day care centre, and finally an employment centre. This is ROC Plaza where school enterprises are located and business partners of the school can open an establishment. These shops and small business are run by students under the supervision of either VET teachers or senior professionals, but they serve paying customers and are accessible to the general public. Although the size and visibility of ROC Plaza is prominent, ROC Nijmegen is not the only VET college that houses learning enterprises within the school. In general, in VET colleges all over the Netherlands, one can find businesses at school grounds, from restaurants to food factories, and from day care centres to administrative offices.

This example of ROC Nijmegen represents a trend in the Netherlands to collaborate more intensively with professional practices. This issue is most explicitly raised in the BOL programmes, the school-based tracks. Although these tracks have a substantial workplace component in the form of a temporary apprenticeship, called practice periods in Dutch vocational education, a National Evaluation Committee concluded in 2001 that the programmes were too theoretically oriented (Stuurgroep evaluatie WEB, 2001). Recently, BBL programmes also started to consider this issue as both students and business partners reported a serious gap between the school-based programme and various workplaces' requirements.

### 10.2.1 Hybrid Learning Environments

A study of Smulders, Hovee, and Van der Meer (2013) showed there is a large variety in the way schools and professional practices organise co-makership, i.e. emerging forms of collaboration aimed at the co-design and implementation of vocational education. Their similarities are that they are all aiming to develop learning environments that cross the traditional boundaries between school and work, which should facilitate the transition from education to the workplace and equip learners to deal with the demands of the current workplace as part of wider society (Zitter & Hovee, 2012). Many consider promoting connections with the world outside of school as important (e.g. Billett, 2011; Dumont & Istance, 2010). Järvelä and Volet (2004) showed in their research that in these kinds of learning environments, learners can be engaged in more complex forms of learning with a conscious drive toward a better integration of learning and working. Others have also stressed the importance of engaging students in solving real-world problems or ill-defined professional tasks that are complex, realistic, and challenging to invoke active learning processes (Baartman & De Bruijn, 2011; Könings, Brand-Gruwel, & Van Merriënboer, 2005).

Zitter and Hoeve (2012) proposed the concept of hybrid learning environments as a starting point for the design of a vocational curriculum in which professional practice constitutes the content of the curriculum, as is described in the previous chapter. One of the basic elements of a hybrid learning environment is the “authentic task.” The authentic tasks of a learning environment come from a specific professional domain, such as building and construction, process technology, the hospitality industry, healthcare, or sports and leisure. Organising learning around vocational tasks requires close cooperation between VET institutions and business partners. The latter bring in up-to-date expertise on the key tasks in a particular domain, whereas the educational institutes bring in the pedagogical expertise to make these tasks suitable for a curriculum.

### 10.2.2 *Authentic Tasks*

As a consequence, in a hybrid learning environment, teaching is also arranged around authentic tasks. Stemming from vocational practice, authentic tasks might need to be re-designed into assignments that are accessible to learners (e.g., divided into component parts or sub-tasks) but “the complexity of reality should remain an essential feature of the tasks” (De Bruijn & Leeman, 2011, p. 697). An important impact on teaching practices is that the teacher’s design role becomes more important. To redesign authentic tasks, Van Merriënboer, De Clark, and De Croock (2002) developed the “Four Component Instructional Design” (4C/ID) method in which the learning tasks are “concrete, authentic, whole task experiences.” Kirschner, Martens, and Strijbos (in Zitter, Kinkhorst, Simons, & Ten Cate, 2009) characterised tasks on a dimension with, on the one end, more traditional school tasks that are well-structured, well-defined, and short, and, on the other end, authentic tasks: “real life problems that are mostly ill-structured and/or wicked and generally need team effort to solve them.” In this approach, a learning domain should be analysed as a coherent, interconnected whole and then be taught from more simple, yet meaningful tasks that are representative of the whole domain, to increasingly more complex tasks.

One important aspect of the design role is that authentic tasks have to be sequenced. When authentic tasks are sequenced, the following should be taken into account:

- sequencing is needed to allow students to progress from peripheral to full participation (Lave & Wenger, 1991) and develop skills, attitudes, and identity accordingly;
- tasks are sequenced from low accountability (little risk involved when making errors) to tasks with high accountability (full responsibility).

Sequencing often has pedagogic qualities and purposes, analogous to designing curricula in educational settings (Billett, 2006). One example is the purpose of gradually building up complexity, for which also the term elaborative sequence is used

(Reigeluth & Stein, in: Van der Sanden & Teurlings, 2003). In her thesis, Teurlings (1993) showed how applying elaborative sequencing to authentic tasks has an effect on the learners' learning skills. Authentic tasks are preferably performed in realistic contexts. Tasks not only involve the application of instrumental skills but also more general competencies such as arranging, planning, and organisation. When a vocational curriculum is organised around authentic tasks performed in realistic contexts, teachers should be present in these realistic contexts as well. In the innovation projects described by Smulders et al. (2013), the learning environments were designed to accommodate larger groups of students (10–30 students). One or two teachers were assigned to supervise this group of students on location. Supervising students at work requires a different type of action repertoire than teaching in class. Aalsma (2011) stated that it requires an expert to directly guide the learner, and that the expert be a master of the work process knowledge and someone who is willing and able to make this explicit to and to share it with the learner.

### ***10.2.3 The Role of Teachers***

To complete an authentic task, learners are expected to integrate different types of knowledge, including formal knowledge, work process knowledge, and practical knowledge. Schaap, De Bruijn, Van der Schaaf, and Kirschner (2009) and also Schaap, De Bruijn, Van der Schaaf, Baartman, and Kirschner (2011) argued that teachers, in order to realize this, should facilitate the development of students' personal professional theories (PPT). By developing a PPT, students may grow into a professional or vocational domain. A PPT serves as a personal reference frame in which shared knowledge and collective norms, values, and beliefs of a particular domain can be stored. Knowledge derived from participating in different contexts and situations within a certain vocational domain become internalised in a PPT. Schaap et al. (2011) concluded that both structure and adequate prompts are important in the process of explicating PPTs.

Teachers are important in providing the necessary structuring. However, it is not yet understood what kind of strategies teachers should use. This is the object of study in ongoing research. De Bruijn (2012) reported on a study amongst 10 teachers from five vocational schools involved in innovative competence-based education. In this study, De Bruijn described strategies of modelling and scaffolding as relevant new repertoires of teaching behaviour and teaching methods in the context of vocational education. Modelling refers to the focus on adaptive forms of modelling, i.e. modelling that is fitted to individual learners' possibilities and needs. The results of this study indicate that there is a need to develop examples, specifications, alternatives, and good practices. De Bruijn concluded that "changing teaching practice requires lots of experimenting, reflecting critically, thinking through dilemmas and practical tensions and adjusting to new habits." She suggested encouraging professional learning communities to help teachers with this.

### ***10.2.4 Impact on Students***

As described above, authentic learning environments have considerable impact on the teaching staff's role(s) and pedagogic repertoire. Another important issue is the impact on the students. Important intended effects are their integrating knowledge and skills and their developing a PPT. The ultimate goal is the improved transition from school to the workplace. Other than the studies mentioned above, which were about the underlying concepts and psychology, limited research is available in which these overall effects have been empirically studied. One important reason for this lack is that designing hybrid learning environments in which students are able to learn from authentic tasks is quite difficult (Zitter, 2010; Zitter & Hoeve, 2012). Most studies have focused on design issues and implementation difficulties. Two case studies are available about successful implementations of hybrid learning environments that help students to link theory and practice, helping students to integrate knowledge and skills (Den Boer & Stukker, 2011; Zitter & Hoeve, *forthcoming*). We will describe both cases in some detail below in order to show the complexity of creating an environment that fosters authentic learning and the demands it makes on teachers and other staff.

### ***10.2.5 Two Examples in Dutch VET***

In their research on a vocational programme for business administration in one ROC, Den Boer and Stukker (2011) described the arrangements of a training programme that was based on two elements: (1) working on assignments, preferably from real businesses in the area and (2) practice periods. In this way, fully individualized educational tracks were realized in learning environments that either were a version of actual practice or very much resembled it. Classes were only scheduled for supporting courses, such as English and maths. Measures were taken for students that were unable to attend these classes due to their work on their assignments. All other subjects were "taught" during students' involvement in their assignments, either in school or during their practice periods. Resources of information, such as books and the internet, were at all times available to students to solve problems, or the students could ask the teacher. Teachers considered themselves to be both coaches and teachers. They decided which (group of) students would be given which assignments, depending on their progress in the curriculum, and they coached students on their assignments. They also taught subjects when either the student or the teacher determined the need for better or deeper understanding of the knowledge behind the problem at hand. A digital tool was developed to keep track of students' progress. Teachers mentioned that certain competences are crucial in order to use such an educational environment for the students' benefit, including first and foremost "knowing your subject by heart," and then "knowing your students," "a pedagogical attitude," "knowing how to best challenge each separate student,"

“flexibility,” and “being able to change plans when beneficial.” When compared with students in a highly regulated, traditionally organised training programme leading to the same qualification, Den Boer and Stukker (2011) reported that students were more motivated, more self-directed in their careers and that they had better entrepreneurial attitudes. The only negative effect was reported on “understanding the importance of acquiring theoretical knowledge,” which was probably because students in the experimental programme interpreted the learned knowledge as “practical” instead of “theoretical.” Unfortunately, due to financial problems on a higher level in the organisation, this training programme ended after only five years.

Based on findings in a design research project that ran from 2010 to 2013, Zitter and Hoeve (2012, 2016) described the turnover of the curriculum for cooks in the School of Hospitality of a ROC in the southern parts of the Netherlands. The curriculum has been redesigned in accordance with the principles of a hybrid learning environment. The School of Hospitality houses three different outlets: a lunch room, a health-food bar, and a formal restaurant; and it caters to different types of events (both in-house and outside). These spaces mirror working spaces of the industry, such as reception areas, kitchens, and storage spaces, but also regular work spaces with computers. In all the work spaces of this case, the various professional tools and instruments can be found, such as professional kitchen equipment, glassware, and high quality ingredients. In the School of Hospitality, about 14,000 paying guests per week are served. To interweave learning and working, the School of Hospitality has adopted the following measures. First, the working spaces were designed to support learning, such as by using them for theoretical interludes or direct instruction interspersed with working. Additionally, spaces have been tailored to acquisition activities while being near to the work spaces for easy interchanges. The lunch room kitchen has to service large numbers of customers in a short time frame (lunch time), requiring learners to collaboratively deliver high quality service in a short time period. The formal restaurant seats groups of people and requires high quality service in the evenings, which helps learners to get accustomed to the hospitality sector’s irregular work schedules.

To make use of the designed conditions, the teaching staff is developing new routines. One important aspect is that they have adopted a new principle for sequencing the content. All the content is arranged around the restaurant’s menu, i.e. theory and skill training are delivered according to just-in-time principles about what is needed to prepare the specific dishes for those couple of weeks. This requires that all teachers and supervisors have profound knowledge of the actual requirements at the shop floor of the restaurants and to what extent the student workers are able to meet these requirements. For this purpose, theory-oriented teachers do observations at the shop floor, and video recordings are made during practice. Supervisors and teachers prepare the theory and skill lessons as a team and discuss what is needed in terms of theory and skill training each week.

In accordance with the principles of legitimate peripheral participation (Lave & Wenger, 1991), novices gradually grow into the complexity of work. Through a pyramid organisation, novices are linked to more experienced student-workers. First year students are organised in teams of eight junior professionals. Second year

students cooperate as a team of eight students. Third and fourth year students manage two coordinating students and therefore manage sixteen students. Mirroring the shop floor, students follow a career path starting as assistant cook and growing into functions with more responsibilities. To allow students to follow a personalized (learning) career path, the curriculum has a modular set up.

The case studies presented also show that the three pedagogic strategies discerned here, in practice, are closely linked. The described learning paths show a connection to the second main pedagogic strategy applied in the Netherlands, namely flexibility, which we will discuss in the next paragraph.

### **10.3 Flexible Learning and Flexible Learning Environments in Dutch VET**

The first attempts to organise demand-driven vocational education in the Netherlands happened in the 1970s and 1980s. In the so called 'Short Tracks in Secondary Vocational Education (abbreviated in Dutch into KMBO) that existed in the 1980s, for instance, teachers experimented with various types of differentiation, mainly using modularised learning materials (De Bruijn, 1997; Harms 1995). De Bruijn (1997) also showed, though, that this practice was not widely spread, and that it highly depended on the efforts of both the national vocational education bodies (Landelijke Organen/Kenniscentra) and the teachers involved in the experiments.

In current VET provisions, the debate about flexibility and customization is strong. The benefits of customized education are often stressed, but knowledge about practice is scarce and contradictive. According to Vink, Oosterling, Vermeulen, Eimers, and Kennis (2010), the realisation of flexible VET is a complex matter and the organisational costs are high, so the tendency is to aspire to high quality standardised programmes and not to emphasise customization too much. Others have stressed the importance of flexibility to enable competence-based education to have an impact (Van den Berg & De Bruijn, 2009; Van Kuijk, Vrieze, Peek, and Smit, 2010).

#### ***10.3.1 Examples in Current VET***

In the report of their four-year study of four VET centres, Gielen, Den Boer, and Waslander (2011) described six examples of flexibility in secondary vocational education, ranging from integral, college-wide models to local solutions for specific problems. The integral, college-wide models basically consisted of two approaches. In the first one, a basic model or (digital) tool was developed. It included a description of all existing courses in the ROC. The aim of this approach was to enable students to choose courses for the choices parts of their curriculum from all available courses, whether these courses were part of their training curriculum and



vocational sector or not. One of the colleges reported that half of the students had already subscribed to one of these courses just one hour after subscription had been enabled on a Sunday evening, thus indicating the demand for this kind of flexibility among students.

The second integral approach focuses on integration within training programmes or vocational sectors. In this approach, flexibility not only concerns the curriculum, but also organisation, personnel, planning, and supporting systems. From previous experiments, this college had learned that flexibility in one domain without flexibility in the other domains leads to failure. A good example of the necessity of the simultaneous development of both a flexible curriculum and support systems was given in the case study of Den Boer & Stukker (2011), mentioned earlier. The flexible curriculum, in this case, resulted in students doing assignments that greatly differed in content, the level of skill needed, etc. For both students and teachers to keep track of each student's progress in the curriculum, a digital tool was developed. The tool allowed teachers to make connections between the assignments and the curriculum content, thus ensuring that at the end of their three-year training, all students had received the training for all of the curriculum's elements. This tool further allowed for differences in the amount of time needed for each student to complete the curriculum. This example also shows the demands this way of teaching makes on teachers (see previous section). This stresses the simultaneous development of both flexibility of the curriculum and the necessary skills in teachers.

In addition to these integral approaches (and within them), Gielen et al. (2011) found various local solutions. Here, we will briefly describe two solutions. In one set of the training schemes, teams of four teachers were linked to groups of 100 students at the start of their training.<sup>2</sup> Two floors were designed for the training of these students, one for their theoretical training and one for their practical training. Thus, teachers could divide their attention to groups of students according to the students' needs. Rosters of four-hour blocks of (in-school) practice or theory were built using these floors. This type of flexibility was combined with assignments and self-regulated learning by those students that were able to do that, among other things. Teachers were thus enabled to divide their time according to each student's educational needs both between the four teachers on the floor and for each teacher separately.

Another training programme combined various types of flexible planning and organisation. The first year introduction programme consisted of fixed and obligatory courses that were offered four times per year. In this way students could enter the programme during the school year, and then quicken or slow down the pace in which they did their courses. Thus, they could successfully complete their first year in six months. The second phase of the programme consisted of 30 modules, of which 17 were obligatory. Of the other 13 modules, each student needed to choose at least 8. The order in which the students completed any of the modules, including attending classes, was not prescribed. In this way, the students could combine subjects with occurring topics in their practice periods. The last half year comprised

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<sup>2</sup>Waslander and Kessels (2008) called this type of flexibility "economy of scope."

an individual writing assignment for the students. The teachers planned the modules by calculating the number of necessary student places (i.e. the total number of students multiplied by the number of modules, and then divided by the number of students in each classroom). The creation of some slack between necessary and available student-places, based on experience, appeared to make choice making and roster making a relatively simple procedure. The school reported that student satisfaction was high.

### ***10.3.2 Lessons Learned***

The research on these cases of flexible planning of education revealed that for decision making in flexible education, four conditions need to be met (Gielen et al., 2011). At the school level, a view on education and the role of customization in it is necessary. Without such a shared view, chances are great that each unit in the organisation will develop its own way of customization. The latter has proven to lead to problems when students want to change courses during the school year, which was one of the reasons customization was introduced in the first place. Secondly, teachers and administrators need a clear view on the process leading to the students' articulation of educational demands. This process is often taken for granted, presupposing that students have clear demands. This very often is not the case (Meijers, Lengelle, Winters, & Kuijpers, 2017). Thirdly, teachers and administrators need a clear view on what variations of educational supplies are needed and/or are realistic. This can concern customization in terms of content, temporal aspects, and didactics. Also, this variation in educational supply should be supported by the flexible organisation of personnel, planning, rosters and rooms, and systems – like student tracking systems, attendance, the electronic learning environment, etc. Finally, schools should have a clear view on their paradigm for matching students' demands and educational supplies. Basically, Gielen et al. (2011) found two models for this: (1) a one-time-choice model, in which each student is optimally supported to make a well-founded choice for a training programme, while change during the programme is not supported and often results in a lost year for the student and (2) a permanent adjustment model, in which assessment of demands is permanently supported and emerging educational needs are met.

### ***10.3.3 A Summary of Feasible, Manageable and Affordable Solutions***

Other authors have given different examples, summaries, and classifications of flexible education (see Van Gelder, 2007; Van Kuijk et al., 2010; Waslander & Kessels, 2008). Most research has been conducted in general education, both elementary and secondary, in the Netherlands. Results from these research studies are mostly not

readily transferable to vocational education. Probably, the most valid enumeration of “feasible, manageable, and affordable” types of organisation of flexibility was given by Van Kuijk et al. (2010), who wrote:

- Possibilities to start training at more than one moment per year
- Customized programmes, based on the demands of the students, mostly established during an intake; Van Gelder (2007) named this as a known practice, which is combined with career coaching during training
- The usage of career coaches in order to keep the student on track and to prevent dropouts or loss of time
- Exemption of parts of the curriculum based on appreciated previous competences
- Shift to a higher level training during training
- Possibilities for students to take exams when they are ready.

### ***10.3.4 Effects on Students***

Research on the effects of (types of) flexibility remains scarce, as stated above. Such research usually combines the effects of hybrid and flexible learning environments because, in practice, these approaches are usually combined (Den Boer & Stukker, 2011; Zitter and Hoeve, 2016). As both case studies described above show, the demands on teachers are high for custom-oriented authentic learning, and other conditions need to be met, such as the availability of digital tools for tracking students’ progress. Demands on teachers include skills and attitudes concerning the content of the teaching subject, pedagogy and psychology, didactics, coaching, organising and improvising, (career) conversation, etc. One could argue, therefore, that these demands are too high for one person to deliver and that teaching is, as a result, more and more becoming teamwork.

## **10.4 Students’ Self-Direction**

In the case of the School of Hospitality described earlier, the administrators chose to use a modular set up, allowing students to follow a personalized (learning) career path. All commencing students start as an assistant cook, working and learning on simple tasks and under close supervision. Gradually, the tasks become more complex in the subsequent modules, and students acquire more responsibility. After showing that they are competent as assistant cooks, they progress into the function of cooks, with different degrees of responsibility (in accordance with the functional structure of the industry, which involves different classifications, such as cook 1, cook 2, chef, and so on). But the students do not have any fixed career path. Whereas some students decide to follow the hierarchical path of becoming a more expert

cook by passing these levels successively, other students might decide they are more interested in broadening their scope and thus they follow modules in hosting or gaining more experience as, for instance, cook 1 in another practical setting. In the School of Hospitality, students are expected to think about and to organise their personal career paths. This case implicitly showcases the fact that students' self-direction has been an important goal in Dutch VET since the introduction of competence-based education in the 1990s.

### ***10.4.1 Concepts and Debates***

On the shop floor, however, the concept of self-direction has given rise to many different practice solutions, ranging from a continuation of traditional educational practice to an almost total "laissez-faire" approach (cf. Harms, G., 2010, 2011; Harms, T., 2009; Van den Berg & De Bruijn, 2009). At the same time, over the last decade, students' self-direction in both general and vocational education has been a subject of fierce debates.

The idea of educational self-direction has advocates as well as adversaries. Those who prevalently value cognitive learning goals mostly believe in guided instruction, arguing that self-direction up to now has not yielded better educational output (Kirschner, Sweller, & Clark, 2006; Van der Werf, 2005). Those in favour of a certain degree of self-direction see this self-direction as a promising instrument toward realising more practical and vocationally relevant educational goals and to developing students' learning potential (their learning to take responsibility). Some of them consider self-reliance and self-regulation as requirements in modern vocational practice and therefore in individual students' future vocational careers (Den Boer, 2009; Kuijpers, Meijers, & Bakker, 2006; Van den Berg & De Bruijn, 2009). As a consequence, in the educational context, self-direction is a learning *goal*: becoming independent, taking responsibility for one's own learning, and coming to know oneself as "a learner and a knower" is one of education's aims for students. Hmelo-Silver, Duncan, and Chinn (2007) referred to this educational goal as "self-directed learning." Others argued that learning, in practice, requires self-direction: one has to learn by practical experience "and students need to seek information and opportunities for learning more actively in contrast to traditional practice rooms" (Jossberger, Brand-Gruwel, Boshuizen, & Van de Wiel et al., 2010). Moreover, the idea of students' self-direction in education fits into a broader societal and pedagogic view in which the learner's own responsibility receives more emphasis. In this view, permitting self-direction in learning would enhance learners' commitment and motivation (Van Emst, 2002). In both of these views, self-direction is a means to improve learning outcomes, either directly when learning in practice or via enhancement of motivation and commitment.

In addition, the concepts concerning self-direction, self-directed learning and self-regulation are not always well defined. Self-direction, or self-directed learning, differs from self-regulation. Self-direction comprises formulating learning goals,

whereas self-regulation does not (Khaled, 2014; Luken, 2008). Self-regulation is a metacognitive process (e.g. orienting, planning, monitoring, adjusting, assessing, evaluating, etc.) within a given learning task (micro-level), while self-direction goes beyond that (macro-level) and entails diagnosing learning needs, formulating learning goals, and identifying human and material resources as well (Jossberger et al., 2010). One might see students' self-direction in education as being opposed to "teacher-direction" (Knowles, 1975). In fully teacher-directed situations, the teacher is responsible for eliciting learning processes, whereas in self-direction, students initiate and regulate these processes themselves. In their extreme forms, the two poles of this continuum represent different axioms about, for instance, the learners' position, the role of their experience, their orientation, and their motivation. These poles should, however, not be treated as absolute opposites: the educational situation and the students' developmental level should determine the best point on the scale for the student. In practice, notions like these seldom are fully explicated and used to underpin the choice of solutions.

The notion is growing that self-direction as a means or a goal has to be *learned* anyhow, which actually might have been overlooked in the beginning (see also Dijsselbloem, 2008). Some people doubt if it can be learned at all. Among adolescents, who are the target population of VET, this might, indeed, be hard: their responsible brain structures are still developing and will thus constrain their self-directing abilities (Jolles, 2007). Vermunt (1998) claimed that students should be given as much responsibility for their own learning as they *almost* can bear: there should be some "constructive friction" in order to challenge their growing independence. In this way, deliberate choices have to be made for each element of a learning situation. But who will determine the goals, content, activities, materials, standards or assessments? Should it be the teacher? Can it be the learner or do both share the responsibility up to a certain point on the scale? An important lesson from the Dutch experiences thus far is that students, in becoming more self-directed, have to receive adequate support from their teachers. Self-direction has to be *learned*, and *laissez-faire* is not an option. As several theorists (Newman, 2008; Vermunt, 2003, 1998; Vygotsky, 1935, 1978) have argued, students need arrangements in which they are challenged but do not get frustrated by unrealistic goals. In most cases a kind of shared direction will indeed be fruitful. In such a situation, learning functions are spread among the students and the teachers. Learning functions include preparation for learning, learning activities themselves and the regulation of learning. Students will gradually take over those learning functions, as far as their development permits. Teachers in their turn have to gradually shift their educational regime. In the beginning, the teacher is fully in control of learning functions, then passes to an activating role, and finally gives over control to the student. In this way, teachers only give the support that is needed in different stages and gradually phase it out (as in scaffolding). Meanwhile, they try to keep students challenged by continuously confronting them with their zone of proximal development.

### 10.4.2 *Teachers' Roles and Skills*

Not surprisingly, then, recent debate and research on this issue in Dutch VET has focussed more and more on the teachers' role. Glaudé, Van den Berg, Verbeek, and De Bruijn (2011) concluded in their literature review that self-directed learning sets a new challenge to teachers. Teachers should help develop self-directing competencies in students by stimulating and supporting learning. They have to emphasize self-directed and independent learning as well as the students' development of self-regulating cognitive, meta-cognitive, and affective skills. Teachers should embrace self-direction, on the one hand, as a new learning goal brought forward by societal changes, which should stimulate students' vocational and working identities, and, on the other hand, as a means to help students develop and integrate their knowledge, skills, and attitudes. But how should they do this? In general, little is known about VET teachers' actual skills in enhancing students' self-direction (Van den Berg & De Bruijn, 2009), and many authors have advocated further teacher training in this respect. From a career guidance perspective, many authors have argued that both the current labour market and society demand that students be able to steer their own careers (Den Boer, 2009; Kuijpers, 2012; Meijers, Kuijpers & Gundy, 2013). These authors' position is mainly theory-based. Some evidence is available, though, showing that when teachers have career conversations with students that aim at building their career identities, students show less tendency to drop out of their programmes (Kuijpers et al., 2006), they give more direction and meaning to both their learning in school and their aims considering work (Den Boer, Jager & Smulders, 2003), and they identify more strongly with work in the field they choose (Winters, 2012). Luken (2008) argued that career guidance that aims at career identity building too strongly depends on reflection, which encompasses the danger of ruminating. He also argued that most teachers are not properly skilled for having these types of conversations with their students. Jossberger (2011), reporting on primary VET, suggested that teachers start activating students, and gradually turn to facilitating students. Khaled (2014), in her study of hands-on simulations in secondary and tertiary VET, suggested that teachers actively guide students' learning activities to stimulate their self-directedness, which might be more effective when they take the role of activators rather than facilitators. In activating students, a teacher gives feedback, applies direct instruction, and teaches metacognitive strategies. Facilitating here means enhancing self-direction in students by permitting them to gradually take over control and adapting the level of support to the student's capacities. In Jossberger's (2011) view, self-regulation is conditional to self-direction, and, as a consequence, comes first in education. Feedback plays a central role in teaching self-regulation, and it has to be focussed and given in the right moment in time. So, more and more, based on research, the idea prevails that teachers' support and feedback is crucial in developing student's self-directedness (Jossberger, 2011; Khaled 2014; Kicken, 2008).

Teachers hold that giving adequate feedback is difficult (Jossberger, 2011). Next to that, De Bruijn (2012), in her study of ten “frontrunners,” reported that teachers in secondary VET think self-regulation is one of the most important aspects of contemporary competence-based education. They claim to use various ways of stimulating self-regulation in their students, and they think this has to be realized in an adaptive and gradual way. In practice, students do not always recognize these efforts (Harms, G. 2011). De Bruijn (2012) also reported a gap between teachers’ intentions and their actual practice: they often return to older methods and do not succeed in realizing really adaptive and flexible combinations of the range of available teaching methods. This practice underscores the problems generally faced in implementing new concepts into existing educational practices. Furthermore, the teachers in this study seem to restrict their new habits to certain learning environments, instead of using the vocation they teach as a frame of reference within which they can flexibly act over the whole range of learning situations. Those teachers also find it difficult to create the right balance between controlling and leaving, to adequately stimulate self-direction in students and to systematically and gradually shift their regime. Given the current shortage of evidence-based, effective pedagogical strategies, Luken (2008) advised teachers to adjust their teaching and guidance concerning self-directed learning to individual students’ development, and to be aware that for students, becoming more autonomous is a difficult personal process that might even evoke social resistance and fear.

We can conclude that the development of a pedagogic strategy concerning self-directed learning still needs a lot of work and effort (see also Khaled, 2014). Moreover, some people doubt if self-direction can be successfully taught at all. It is not likely, then, to suppose that much is known yet about the effects of self-direction on students.

### ***10.4.3 Effects on Students***

In secondary VET up until now, there is indeed hardly any evidence for the supposed direct beneficial effects of students’ self-direction on their motivation or drop-out rate, on their personal development, their learning gains or career competences. Evidence does exist, though, that teacher support, especially as career guidance, provides these beneficial effects, by increasing self-direction as an intermediate variable in students (Den Boer et al., 2003; Kuijpers et al., 2006; Winters, 2012). Van den Berg and De Bruijn (2009) found that a few small-scale, in-depth studies mainly focussing on self-regulation showed no significant effects in students. However, the hints of effects these studies yielded turned out not to be positive. Some other studies reported by Van den Berg and De Bruijn (2009), though, did show some positive effects. Given these scattered and contradictory results, these authors conclude that thus far there is no such thing as a chain of evidence supporting the effectiveness of new teaching practices in secondary VET. Recently, Khaled’s (2014) empirical study of 516 students, of which two thirds were in secondary VET,



showed that self-directed learning activities do enhance competence development, but only if students themselves perceived these as authentic and as permitting self-directedness. This led her to plea for teachers' continuing efforts to create self-directed learning environments, under the condition of assessing their perception by students, offering students options to choose how to perform a task, and actively guiding their learning activities to stimulate their self-directedness. An interesting finding Khaled also reported is that self-directed learning activities do not pay off when knowledge and skills are the educational goals, but that they do if competencies are. This seems to support both positions in the pro and con debates we referred to earlier in this paragraph. In primary VET, Jossberger (2011), in her study on the effect of feedback on self-regulation, found some progress in students, but stated that there is much room for improvement as well. Furthermore, Jossberger argued that one could worry about low achievers: "They will probably require more assistance and support in accomplishing the appointed independence and developing self-regulated learning skills." This is a conclusion many other authors have drawn, and not only concerning low achievers (Kicken, 2008; Luken, 2008; Van den Berg & De Bruijn, 2009), once again demonstrating the need for adequate pedagogical strategies.

## 10.5 Concluding Remarks

In this chapter, we have joined authors who, over the years, have identified three pillars as building blocks for a pedagogical framework on vocational-education-to-be, since vocational education lacks such a framework in the Netherlands thus far. These pillars are creating authentic learning environments, creating flexible learning environments, and creating environments that support self-directed learning. Financially stimulated by the national innovation programme (het Innovatiearrangement) in the 2000s, Dutch VET programmes have put considerable efforts in developing flexible learning arrangements in which authentic learning and self-directed learning have been combined (De Bruijn et al., 2005). As we have advanced in this chapter, developing such learning arrangements has been hindered by the fact that the broad conceptual models gave direction to ideals and schemes of thinking but provided no guidelines for design and/or teaching practice. Van der Meijden et al. (2013) observed that the concepts were subject to multiple interpretations, and that a proven model or models of how to design a curriculum based on the principles of authentic, self-directed and flexible learning still do not exist.

Furthermore, efforts to translate these models into educational practice have sometimes been accompanied by fierce debates about the meaning of the concepts and models. The interpretation of the concept of self-direction as either a means to enhance student's performance or an educational goal, necessary to enable graduates to find their way on the labour market, is a clear example of this process of translation. Although adjoining fields of research have provided evidence for researchers and developers to build on, the lack of an integral pedagogical theory

also prohibits a thorough basis for research on the feasibility of authentic learning, flexible learning, and self-direction in practice. The result is a very small body of scattered research that provides little common basis to build theory on (cf. Mulder, 2014). A complicating factor is that the implementation of any model requires change at different organisational levels (see Hoeve & Nieuwenhuis, 2006), as is described by Wesselink and Zitter (2017). Moreover, as described in the section on authentic learning, implementation requires co-makship between the school and business partners. Smulders et al. (2013) stated that research on partnerships shows that cooperation is often problematic and very often unsuccessful. Decision making processes are quite complex because no one is in charge of making decisions and each partner keeps its own autonomy. Next to these general observations, some specific remarks can be made about the three topics that constitute pedagogical strategies in use in contemporary Dutch VET.

Over the last decades, much attention is paid to the development of authentic learning environments and to the development of authentic learning arrangements in addition to the formal apprenticeship period. This has been a major concern for the full-time tracks (“BOL” in Dutch) that were evaluated as being too theory driven and lacking possibilities for practical experiences. This development has had considerable impact on the role(s) and pedagogic repertoire of teaching staff. One important consequence is that the increase of attention to authentic learning imposes the role of designer on teachers, who have to design the link between theory and practice on the curriculum level, carefully think through sequences of authentic tasks, and need to redesign working tasks into learning tasks.

Attempts to customize vocational education to the individual student’s needs have been made over the same period of time. The relevant literature shows a wide variety of forms but little research on the effects on students’ attitudes, motivation, and achievements. The little research that is available shows promising effects. The literature also shows that customization should be approached in an integral way. It does not only concern educational content or curriculum. Simultaneous development of supporting tools and systems, organisational support and skills and attitude development in teachers seem to be a “*sine qua non*.” In concordance with the realization of authentic learning, customization of vocational education seldom is just a matter of education. Cooperation with employers appears to be necessary to providing customized vocational education. The field of construction provides the clearest examples of this. In this field, employers almost as a rule cooperate in separate bodies to provide sufficient variation in tasks for students to become skilled workers, by having students circulate between sites.

Developing self-direction in students and having them learn in a self-directed way has turned out to be a difficult process, for pupils and for teachers. Experiences during the last decades have shown that most students will not independently develop a self-directed way of learning, nor shape their own educational and vocational career, by cause of developmental, social and psychological constraints. They need proper support and feedback from their teachers, for instance through (proper) career guidance, and in no way can *laissez faire* be an option. In full-time education, self-directedness is much more of an issue than it is in part-time education. In the

Netherlands, administrators have put much effort into countering dropout rates, especially in primary and secondary full-time vocational education. Partly, one could argue that at least some school dropouts are rather self-directive. Research shows that almost half of the dropouts later return to education when they understand how education can help them achieve jobs they strive for (Van Wijk et al., 2011). Apparently, their ability to be self-directive had been underestimated until then. The understanding of the importance of teachers' support and feedback in relation to self-directedness in full time education, too, has considerable impact on teachers' pedagogic repertoire. Teachers have to tailor their support to individual student's conditions in order to induce the proper level of challenges set to them. Here again, a minority of teachers show all the skills needed to do so, so the others will have to deliberately develop them. They, in their turn, need support in (gradually) replacing their old habits with new ones.

We can conclude that these developments give rise to three overall competences teachers should have. First, they need to be in control of the subject they teach in such a way that they can flexibly present it across different learning environments. This holds for disciplinary organised subject matter (e.g. languages, arithmetic) as well as for more interdisciplinary fields (e.g. business processes in the domain at hand). Furthermore, teachers should be able to attune their subject matter knowledge to students' learning needs and their actual demands in the learning context (and in the meanwhile keep up with developments concerning their subject). Third, they need to know when and why to permit or to stimulate students' self-direction, and to be able to make decisions concerning each student's optimal level of self-direction time and again.

Finally, considering the impact of learning in authentic, flexible, and self-directed environments on teachers, we want to touch upon some lessons we learned and issues that still remain:

First, teachers' roles in these contexts have a far wider variety than before. Teachers have to be at the same time vocational experts, coaches, career counsellors, theoretical experts, and educational developers. If one person should be playing all these roles is not yet clear, nor if it is necessary, useful, and effective to spread them among the members of a team of teachers.

Second, developing authentic, flexible, and self-directed learning environments requires considerable financial investments. The question about whether such environments are financially sustainable is often raised. In some cases, it is reported that experiments with such environments have been stopped for financial reasons. (See the cases described in this chapter based on work of Den Boer and Stukker (2011) as well as of Smulders et al. (2013)). However, closer observation shows that these financial reasons are not always related to the experiment itself but to other developments in the organisation. Moreover, other experiences suggest that that after initial investments to develop the learning environment, there are hardly extra costs. But there is no systematic knowledge on the costs of authentic, flexible, and self-directed learning environments, compared to traditional ones.

In this chapter, we described that even now, VET-schools are struggling with design and implementation issues, and that the associated pedagogical practices are, thus, still under construction. Not surprisingly, research into such new practices and their effects on students has not yet revealed clear cut results about educational arrangements and expected effects, and probably will not in the near future (see De Bruijn et al., 2005). In addition, we want to raise the question about the type of research that is needed to deliver the knowledge that is needed to bring forward these concepts and models and to test their validity and effectiveness. For this purpose, very often large scale effectiveness research has been conducted. As we have shown in this chapter, these studies seldom produce the needed evidence to call a programme “evidence based” and therefore worthy to be broadly implemented. We would like to make a plea here for research that is conducted in close cooperation with practice. This type of research should reveal the reasoning behind the translation that a school or a team of teachers has made and take the context of the programme into account. Thus, the aim of the research should not be to prove a concept or model right or wrong. It should show how the concept or model is translated into practice in a certain context, whether the outcomes in that context are realised and, if possible, due to which mechanisms that the designers have presupposed (Van Aken & Andriessen, 2011). Generally speaking, the scope of this type of research is small, but if this kind of research is conducted in various contexts where the same concept is translated into practice, then the total results of these researches should shed some light on the studied concepts’ and models’ usefulness, consistency, and effectiveness. This could be the start of an empirically based Dutch vocational pedagogical theory.

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# Chapter 11

## Work-Based Learning (WBL) in Dutch Vocational Education: Connecting Learning Places, Learning Content and Learning Processes

Jeroen Onstenk

### 11.1 Introduction

In this chapter developments and issues with regard to the integration of workplace learning in Dutch vocational and higher professional education are analysed. There are high hopes about what Work-Based Learning (WBL) could bring to vocational education as well as lifelong learning, but also some serious sticky problems with regard to the vocational development of students in VET. Both pro- and counter-arguments look mostly at the workplace for what it can bring to VET from the perspective of the school, rather than looking at the workplace itself as a learning environment in its own right. Many critical reviewers (Bronneman-Helmers, 2006; Nijhof & Nieuwenhuis, 2008) claim that rich learning and deep learning cannot occur in the workplace, especially with regard to theoretical, disciplinary knowledge. Other researchers (e.g., Billett, 2001), as well as many students, report good learning results in the workplace which induces a strong motivation for learning. Indeed, some argue that experiences in educational settings do not have a monopoly on the development of robust knowledge, rather it depends on the kind of activities and interactions which are provided, and how students engage with those experiences.

This chapter considers workplaces as learning environments which can enable rich, adaptable and robust learning, arising through workplace experiences. Both school and the workplace offer physical and social settings that provide access to particular kinds of knowledge and it is the connection between these that realises more fully the richness of contributions made to learning. The aim of this chapter is

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to address this theme by focusing on the position of WBL in Dutch VET, which makes for an interesting case study because of the particular characteristics of Dutch VET as a mainly school-based system with a strong work-based component.

This chapter attempts to describe and analyse developments and issues with regard to workplace learning in Dutch vocational and higher professional education during the last twenty years. The Dutch VET system is primarily a school-based system, though it contains an apprenticeship component as well (Onstenk, 2004; Smulders, Cox, & Westerhuis, 2013). Nevertheless, workplace learning is a considerable part of the curriculum, both in the school-based and apprenticeship trajectory. Dutch Higher Professional Education (HPE) too includes a considerable and growing component of workplace learning in the curriculum. This stems from the need felt for authentic learning environments.

The chapter analyses the discussion about the value and quality of workplace learning in VET and HPE and covers, after a short historical overview), the following main issues:

1. Learning outcomes of WBL in VET
2. The development of an effective pedagogy of WBL:
3. The enhancement of the quality of workplace learning in terms of affordances and agency/engagement:
4. The growth of WBL as organisational problem.

## 11.2 The History of WBL in Dutch VET

Some historical grounds can be given for the peculiar position of WBL in Dutch VET. Apprenticeship as a system of work-based learning in the Netherlands has a shaky history. It virtually disappeared with the formal abolishment of the guild system at the end of the eighteenth century. Following this time lag, apprenticeships were recreated on a small scale before WW II, but they only took off again after 1945. It could be argued that this recreated Dutch apprenticeship system, as it existed until 1996, was in fact a kind of ‘new apprenticeship’-scheme, rather than a continuation or even legacy of an age-old system. Apprenticeship was, until the 1980s, concentrated in technological sectors (e.g., metalworking, shipbuilding, electrical engineering, construction as the preferred pathway to skilled production jobs. Nurses too had a hospital-based internship system which was in many ways quite analogous. Contrary to Germany, however, there was no strong tradition of apprenticeships in small crafts, with a few exceptions like training to be bakers, goldsmiths or opticians. Contrary to countries like England or Germany, there was also never a strong connection between apprenticeships and labour unions. Unions did and do have formal influence in the apprenticeship system as well as in the formal secondary vocational education system, but they think of apprenticeships only as a training trajectory, and not as a labour market issue or membership protection device (Wolbers, 2003).

Since the 1980s, apprenticeships in the Netherlands declined in status as well as attendance, although there have been periodic resurrections (Fleur & Van der Meer, 2012). The reasons for this decline are both economical; economic crisis, the withering away of traditional sectors like metal industry and shipbuilding, new competency demands, as well as social; growing attendance to general education and a declining popularity of technical jobs.

In the 1990s, work-based learning and apprenticeships were again ‘rediscovered’, but with new learning and working arrangements and with new connections between schools and work-based learning. In 1996 various vocational learning paths and school types (apprenticeship system and school-based vocational education; initial and adult vocational education) were integrated into a single vocational education and training system. The Law on Vocational and Adult Education (WEB) created, for the first time in the Netherlands, an integrated system of senior secondary vocational education (MBO), bringing the formerly separate systems of school-based VET and work-based apprenticeships into a single system (Nijhof & Van Esch, 2004, Onstenk, 2004).

Dutch full-time school-based secondary vocational education (i.e. primarily technical education) before 1996 already had a smaller or larger practical component. After 1996 however, the practical component in most courses was further enlarged and measures were taken to improve the quality of learning in workplace settings. Vocational colleges became responsible for guidance and evaluation of the practical period, and regional apprenticeship bodies which were hitherto responsible for this task were dissolved. The role of companies also became more formalised as a quality system for practice placements was developed, albeit only in a rudimentary form in some sectors. National bodies for vocational education began to accredit the placement companies and formally control their quality as a learning environment by checking the availability of suited tasks and a workplace coach or mentor (Onstenk, 2004; Smulders et al., 2013).

The WEB made workplace learning an essential part of every senior secondary vocational education and training curriculum. Two ‘learning pathways’ were introduced, a school-based pathway and a work-based, apprenticeship pathway. Both pathways combine learning in school and in workplaces, but to differing degrees. The school-based pathway includes workplace learning for 20–60% of the total curricular time. Before the WEB, workplace learning in school-based VET could vary between 12 weeks (in a 3-year curriculum in administrative training) to a year (in a four-year course in high-level technical vocational education). Since then, the actual amount of workplace learning has risen. In 2005 the average, over all courses in all sectors, had risen to more than 50%. However, this figure later diminished somewhat as a result of a new emphasis on general ‘school’ knowledge, like language and maths (Bronneman-Helmerts, 2006). Still, there is a growing value attached to workplace learning, both for the motivation of students and for the attainment of objectives with regard to problem-solving and work process knowledge (Onstenk, 2003). The work-based pathway on the other hand, includes an apprenticeship in a company for at least 60% of the time, as well as a 1- or 2-day school release. In both pathways, regional VET colleges (in Dutch acronym: ROC) deliver the school-based

component, but also bear responsibility for the whole learning process as well as for awarding the qualification (Smulders et al., 2013).

Many regional VET colleges are not very interested in promoting work-based (apprenticeship) courses. They prefer increasing the amount of practical learning in companies or in simulated environments as part of school-based pathways. An important argument is the greater freedom for the school in designing these kinds of trajectories. That is, students do not need to have an employment contract with the company, as in traditional apprenticeships. Also, colleges receive greater financial support for school-based courses. One problem with this tendency however, is the factual absence of the school at the workplace.

Apart from quantity, pathways differ with regard to the role and responsibilities of companies in the workplace curriculum. In the school-based pathway, participants are students enrolled in college. They participate in workplace learning during a couple of shorter or longer periods (between 3 months to a whole year), often in a number of different labour organisations. In the work-based pathway, apprentices are as a rule employees who combine part-time education with an apprenticeship in a single company, mostly in the same job and department. There is, however, a growing number of apprentices, with or without an employment contract, in collective training facilities. For example, in the building industry since the 1980s, almost all apprentices are employed by so-called Regional Practice Centres, established by cooperating building companies. Companies then hire an apprentice for specific tasks or periods. This facility was institutionalised in a period of economic crisis as a countercyclical measure. However, it has been preserved in economically better times, because it proved to be a good way to train apprentices for the new broad vocational profiles, rather than focusing on specific processes in a more narrow specialised building company.

In HPE also, the amount of time spent on workplace learning has risen considerably in the last fifteen years, sometimes up to 40% of total course time (e.g., in teacher and nurse training). Also, real work assignments have become part of many courses as well as assessment procedures. In HPE, workplace learning is often seen as a necessary but 'low' practical form of learning, characteristic of vocational and professional education, and it is contrasted with academic learning. In actuality however, workplace learning is very important in 'academic' universities, as part of formal training, such as in medicine, or as elaborated post-university training, like in law (judges, lawyers). Even learning to do research, in a laboratory or in research institutions, requires a lot of (informal) workplace learning, if only to learn how to deal with research cultures and politics (Latour, 1988).

In the Netherlands, as elsewhere (OECD, 2010), the expansion of the objectives of vocational and professional education to include effective problem-solving on the job and work process knowledge, as well as preparation for lifelong formal and informal learning (see Chap. 2), made learning in the workplace more important, both in terms of the time allotted to WBL in the vocational curriculum, and in expectations with regard to learning outcomes.

Learning in authentic working life environments is broadly seen as very important in helping students develop their competencies, skills and vocational identity

(Tynjälä, 2008), as well as career competencies. In 2014 the Dutch Minister of Education even suggested reintroducing concepts from medieval apprenticeship practice (apprentice – journeyman (*gezel*) – master) as a way to promote both craftsmanship and motivation for VET (OCW, 2014). Although this suggestion was welcomed as recognition of the importance of craftsmanship after a long period of stress on more general competencies, it can be doubted if this will become more than just the use of a ‘trusted’ old concept for something new. However, it does fit well as a next step in the history of WBL in Dutch VET, which shows a gradual relative decline of WBL in apprenticeships and at the same time a rise of WBL in school-based VET as well as in HPE.

### 11.3 The Learning Outcomes of WBL

The high, but disputed, expectations with regard to learning outcomes of WBL refer both to a smoother transition from school to the workplace and to the acquisition of deeper and more effective professional expertise (see also Chap. 7). Most Dutch educators and researchers would agree with Billett (2011) that vocational and professional education should provide students with access to and engagement in authentic instances of practice. They expect work integrated learning to provide students with experiences in practical settings that will help them move more effectively into their selected vocational or professional practice.

A core problem for all VET systems, and even more so for school-based ones like in the Netherlands, is the complex and problematic nature of this transition or ‘boundary crossing’ (Bakker & Akkerman, 2013) that learners must make from education to the workplace (Tuomi-Gröhn & Engeström, 2003). Studies show a gap between what is learned and what is required of competent professionals in an ever-more complex world (Baartman & De Bruijn, 2011). Professional expertise can be described as consisting of three basic and closely related elements: theoretical knowledge, practical knowledge and self-regulative knowledge (Chap. 7). Learners are expected to integrate these different types of knowledge, for example, formal knowledge, work process knowledge and practical knowledge. Developing an integrated knowledge base is seen as a lifelong learning process across different contexts, such as school, hobbies and part-time jobs, in both formal and informal settings (Schaap et al., 2009).

There is also a lot of criticism with regard to achievable learning objectives in WBL (Bronneman-Helmers, 2006). The workplace has to meet a whole range of conditions in order to generate or facilitate learning (Fuller & Unwin, 2003a, 2003b). Nijhof and Nieuwenhuis (2008) compare the findings of Bailey, Hughes, and Moore (2004) to the Dutch situation and express strong doubts about the possibilities for (academic) knowledge acquisition and deep learning in the workplace, although at the same time they acknowledge the possibilities for acquiring practical skills, self-confidence and work process knowledge. The learning process in the workplace focuses more on participation in work-related processes and less on

organised acquisition of theoretical knowledge (Nieuwenhuis, Poortman & Reenalda, 2014). In incorporating more workplace learning into the curriculum at the expense of school-based, subject-centred learning, there is a risk that core subjects, such as languages and mathematics, will somehow be marginalised (Tynjälä, 2008). In the Dutch situation, this fear is quite often expressed by policymakers (Bronneman-Helmers, 2006; OCW, 2014). In seemingly contradictory policy statements, it is emphasized that vocational education needs both more emphasis on 'general' subjects as well as more craft-oriented courses, preferably over a shorter course duration.

Nevertheless, as is stressed by Dutch researchers (De Bruijn, Leeman, & Overmaat, 2006; Onstenk, 2003, 2009; Schaap et al., 2012), this problem does not rule out the necessity for fruitful connections between theoretical and situated knowledge. Work-related learning should be an integral part of a curriculum and connected with the more theoretical parts of the course. The Dutch discussion and practice seems to oscillate between different models, from the traditional, experiential to more recently the work process model. There are however, only small steps towards the connective model (Griffiths & Guile, 2003). Work-based learning is relevant not only for task and job-related practical vocational subjects, but also for core theoretical subjects in the VET curriculum (Guile, 2014).

Poortman (2007) shows that though existing WBL periods in Dutch VET achieved some competencies, goals with respect to establishing elaborate relationships between theory and practice or developing a basis for lifelong learning, were in many cases not realised. One reason is that a number of participants in work learning places avoids explicit learning behaviour (Poortman, Illeris, & Nieuwenhuis, 2011) in favour of productive work, especially when it comes to the development of learning skills. However, it may be the case that there is no difference between these two processes. Nevertheless, the tension between production logic and learning (educational) logic in any real workplace learning site facilitates or even elicits this kind of behaviour (Nieuwenhuis, Poortman, & Reenalda, 2014, Nieuwenhuis & Van Woerkom, 2007). Of course, as many teachers will acknowledge, avoiding learning happens a lot in schools too. Moreover, the argument seems to presume that simply doing the work does not offer learning opportunities. Many VET students and apprentices testify that they learn a lot on their jobs, but that they often do not recognise the relationship to what is taught in school (JOB, 2012; Onstenk, 2003).

So it is hard to describe the results of their learning in terms of qualification. A new task can be planned and recognised. But the occurrence of a disturbance or something unexpected as a strong source of learning is by nature not planned. The result is that 'what' and 'when', someone learns at a workplace is neither predictable nor only guided by explicitly formulated learning objectives. But this can still be a very powerful learning process. According to a systematic review study on the efficiency of workplace learning in Dutch VET, indirect returns are related to higher wages, better labour market chances and improved business processes (Poortman, De Grip, Nieuwenhuis, & Kirschner, 2012).



So, in conclusion, WBL in Dutch VET indeed enables a lot of relevant authentic learning and delivers important learning outcomes. But at the same time there is a lot of discussion about the quality and depth of that learning.

## 11.4 Towards a Pedagogy of WBL

It is the elusive character of WBL that challenges recognition of workplace learning in VET and asks for the development of what could be called a workplace pedagogy (Nijhof & Nieuwenhuis, 2008; Onstenk, 2009), taking up a theme that also gets a lot of attention in international literature (Billett, 2002, 2006; Fuller & Unwin, 2003a, 2003b; Tynjälä, 2008). This has to do both with stimulating learning in the workplace and with making it an integrated part of the course. Learning possibilities in specific workplaces differ vastly because work requirements are not uniform and may be quite particular to each workplace, even across the same occupational field. The ‘ideal’ intended workplace curriculum comprises the identification and sequencing of work activities that represent the ‘course to be run’ and that lead to full participation in the particular work practice (Billett, 2006). Young (2008) stresses that learning in modern workplaces is not only a process of participation, but also involves the acquisition of knowledge which may or may not be available in the ‘communities of practice’ in which people find themselves. Learning in workplaces raises issues of knowledge, curriculum and pedagogy which cannot be addressed if learning is seen as only a process of ‘participation’.

The characteristic of work-based learning in Dutch VET is that it is, at best, a partial curriculum, being part of a larger course curriculum, which always includes school-based learning, in both mainly school-based pathways and in mainly work-based pathways. In the Dutch VET curriculum, a combination (but not necessarily a connection) is achieved between knowledge acquisition in classroom lessons and learning that takes place by participating in the practices of the vocational work community. These learning processes however, should be connected. Combining unconnected aspects of school-based and work-based settings is not sufficient to ensure that learners will develop an integrated knowledge base (Zitter & Hoeve, 2011). Transfer of knowledge between education and workplace settings is problematic. So, it is necessary to develop an integrative pedagogy (Tynjälä, 2008). In the workplace learning situation, the key elements of expertise – i.e., theory, practice and self-regulation – should be integrated. Incorporating work-based learning in education requires the development of pedagogical models which take into account both the situated nature of learning and generic knowledge on the development of expertise (see Chap. 7). It is important to realise that this is not a matter of simply applying theoretical knowledge in practice, but of developing integrated personalised knowledge. The theory that is needed in any particular situation is mainly learned through participation in practice and by receiving feedback on your actions (Eraut, 2004). So, knowledge transfer to a practical setting may entail considerably

more learning than the original acquisition of ‘academic’ knowledge. When theory is learned it is necessary to use it in practical problem-solving situations – either to authentic or to hypothetical cases – so as to develop integrated expert-like knowledge (Tynjälä, 2008). Similarly, it is important that when students engage in on-the-job experiences, whether as trainees, apprentices or student project participants, they have enough in-time opportunities to reflect on their work processes and work contexts in the light of theory. This kind of pedagogy relates formal and informal learning and promotes the development of reflective competence and boundary crossing skills (Guile & Griffiths, 2001). But, while the need for the development of a workplace pedagogy is widely recognised in the Netherlands and important steps have been taken in this regard, there is as yet no generally accepted model for how that workplace pedagogy should look like.

## 11.5 The Learning Potential

Workplaces differ vastly in their learning potential (Nijhof & Nieuwenhuis, 2008; Onstenk, 2003). Learning opportunities vary widely among apprentices and workplaces, due to a combination of structural, cultural, and pedagogical factors (Billett, 2006). Learning processes and the development of competencies result from the specific combination of student/worker’s skills and qualifications (formal education, work experience, learning skills), their ability and willingness to learn and develop their competencies and the learning possibilities on the shop floor (tasks, co-operation, control, autonomy, training policies, organisational change etc.). The learning potential of a work situation refers to factors that determine the likelihood that learning processes will occur in a particular job situation (Onstenk, 2003). This likelihood depends on:

- the learning opportunities on the job and availability of on-the-job training or ‘affordances’ (Billett, 2003, 2006)
- the available competencies and learning abilities of the trainees as well as their motivation and willingness to learn, i.e. ‘agency and engagement’

Learning opportunities are determined by the actual job content (scope and variation), the number and extent of problems to be solved and the autonomy to deal with these problems. Jobs differ greatly in content and variation. The diversity of social practices constituted under particular occupations, be it nursing, hairdressing or metalworking, have to be taken into account (Billett, 2003). Also, a company has a lot of organisational choice in this respect; the same kind of job can be designed in different ways, allowing for more or less learning opportunities. There are three main dimensions of learning opportunities which determine the learning potential of the workplace: the content of the work, the social learning environment and the availability of knowledge and information on the workplace.

### ***11.5.1 Work Content***

Learning takes place during the performance of work activities and by participation in practice. Thus, learning possibilities depend on the structures, norms, values, and practices within workplaces (Billett, 2003, 2006). The best learning opportunities are offered by jobs that allow apprentices to encounter, on a regular and recognised basis, new situations, problems and 'events', in and by which they can learn about new methods, technologies or products. Learning by doing can be strengthened when tasks are sequenced in such a way as to include all tasks needed to develop from peripheral to full participation. Furthermore, tasks should be sequenced from low accountability (little risk involved when making errors) to higher accountability (assuming full responsibility). One instantiation of task sequencing is the gradual building up of complexity in the work problems encountered (Van der Sanden & Teurlings, 2003). Encountering serious work problems, developing interest in solving them and having the opportunity to reflect on both problem and solution are strong incentives to learn.

Some learning places are more expansive than others. An expansive learning environment for apprentices (and by extension practice learners in VET) includes, according to Fullen and Unwin (2003a, 2003b), opportunities for both 'on-and off-the-job' learning, knowledge and skill development through participation in multiple communities of practice, access to knowledge-based qualifications and a structure for progression. This can include guidance. In contrast, a restrictive learning environment is characterised by a narrow range of 'on-the-job' training, no organisational structure for progression and acquisition of new skills, no access to knowledge-based qualifications and restricted participation within a singular community of practice (Fuller & Unwin, 2003a, 2003b). Of course, as stressed before, motivated students can find learning opportunities even in poor learning environments, just like workers find ways to learn in so-called low-skilled jobs (Kusterer, 1976). It can be concluded that the content of the actual work to be done is the most important source of affordances in the workplace.

### ***11.5.2 Social Learning Environment***

Work content, nevertheless, is not the only source of learning. Learning, like working, is done by an individual, but always in a social context. An apprentice has to learn to become part of a social environment and a community of practice like a team, a division, a labour organisation or professional group, and in the beginning this takes place through peripheral but legitimate participation (Lave and Wenger, 1991). Many vocational schools see this as the most important contribution of WBL as compared to schools (Onstenk, 2003). Vocational learning can be seen as a process of enculturation and participation in a community of practice whose members share activities and responsibilities (Wenger, 1998). The social-communicative

work environment can offer more or less inducement to learn (Onstenk, 2003, 2010). The amount of collective and mutual learning connects closely to the problem richness (or sometimes hazards) of the job and refers to learning of and with others in the work place as a community of practice. Social clues for learning/problem-solving are given by experienced colleagues, experts and supervisors. Collective problem-solving, giving and taking support and feedback, and also telling work-related stories, all strongly favour learning. Experienced colleagues and supportive supervisors must be present and must be accessible. Learning in the workplace presupposes that language is a part of practice, not only because an apprentice can learn from talk, but also has to learn to talk in order to get access to the community of practice (Guile & Griffiths, 2001). Lee et al. (2004) stress that learning involves narrative work because actual learning may be ‘retrospective’ or ‘hypothetical’, achieved through a series of interwoven narratives concerning the self and one’s biographical history in terms of work experiences and practices.

Blokhuis (2006), in an in-depth analysis of Dutch apprenticeships in different sectors, finds that practice coaches can play a stimulating role in building these narratives, if they are available during the entire period of workplace learning, have thorough knowledge of what is required to perform tasks and participate in daily work processes, and are well-prepared and willing to search for ways of interaction instead of simply using fixed routines. However, he also finds that these conditions are not always fulfilled. Sometimes the formal and trained mentor is a foreman or an employee of the personnel department, whereas actual guidance and mentoring is performed by a non-trained, less experienced fellow worker (Onstenk & Janmaat, 2006). This is not necessarily a bad thing. Younger, less experienced workers may even be more effective coaches, presumably because in age they are closer to the apprentice, but also because, being newly experienced, they remember their own learning process better (Blokhuis, 2006). All in all though, it can be concluded that learning as a social process of (peripheral) participation (Tynjälä, 2008; Wenger, 1998) is an important dimension of the learning potential of jobs.

### ***11.5.3 Information Availability***

An important, and often neglected, dimension refers to relevant information that is available to apprentices and students in the job situation (Onstenk, 2003, 2009). Information can be available in the form of job aids, databases, handbooks, manuals, etc. or as information produced in the production process itself, i.e. as an effect of automatisisation and informatisation. It can also be embedded in the physical set up of the work situation. Learning strategies used on the job are specific and situation-bound. They are determined by the attempt to handle the job with minimal effort and maximum results. Available information and clues, provided by the social and physical work environment, are actively used. Of course, the information must not only be present, but also (made) accessible for the learner as part of workplace affordances (Billett, 2006).

### 11.5.4 Agency

Even the most inviting workplace with a great range of affordances can be neglected by an individual learner. Indeed, many students stop explicit learning when they have reached a minimal level of routine that enables them to do the job (Nijhof & Nieuwenhuis, 2008; Poortman et al., 2011). Actual learning is determined by the available competencies and learning abilities of the learners (students/apprentices/employees) as well as their motivation and willingness to learn (Onstenk, 2003). There is much 'reactive learning'; learning that is explicit but takes place almost spontaneously in response to recent, current, or imminent situations without any time being specifically set aside for it (Eraut, 2000). It is powerful, because it suits the needs, expectations and 'life worlds' of those participating in it (Cullen et al., 2002), as opposed to learning planned by the school that aims at generalised objectives.

Individual agency always shapes what constitutes, through workplace 'affordances', an invitation to participate in learning (Billett, 2002, 2006). In instruction as well as in performing work tasks, it is most often the practical instructors, the practical work supervisors or the teachers who are in control. They select what to do, when to do it, and how to do it. Nevertheless, because learning only takes place when the apprentice is in some way involved, workplace learning opportunities are never solely dependent on processes, structures or characteristics that are the exclusive property of an organisation or workplace. A working environment structured to facilitate learning will not necessarily guarantee that employees or apprentices 'take up' the learning opportunities that are offered (Billett, 2002; Fuller & Unwin, 2003a, 2003b). There can be no guarantee that individuals participating in workplace activities will learn what was intended or has been enacted. It is most likely that individuals themselves will decide how they engage with the affordances offered by a particular social practice (Billett, 2006).

In fact, many apprentices and VET students do decide to engage with and make use of the learning opportunities offered to them. They are often more motivated to take on these opportunities at the workplace than at school (JOB, 2012). Perhaps then, it is not that remarkable that agency in WBL has only recently received specific attention in Dutch VET. It is nevertheless, strongly advocated by dialogical career guidance, which builds on reflection on learning in practice (see chapter of Meijers and Kuijpers). Onstenk (2010) for example, reports on a project where agency is stimulated in combination with teamwork and learning, by letting students work in student teams on assigned tasks, and giving them peer coaching and training beforehand.

In a recent project, supported by the knowledge center for administrative vocational education in cooperation with some regional VET colleges, a method to stimulate agency was developed and tested (Klarus & Van Vlokhoven, 2014). The method, referred to as WISH in acronym, is based on the Mental Contrasting with Implementation Intentions model (MCII, Oettingen & Gollwitzer, 2009 in: Klarus & Van Vlokhoven, 2014). MCII is a meta-cognitive strategy that participants can

apply on their own learning objectives. For the Implementation and Intentions component (II), students connect with a goal; e.g., I want to be good in... . The Mental Contrasting component (MC) on the other hand, develops goal commitment. MC stimulates readiness to make if-then plans. The effect is a greater motivation and commitment to the goal by stressing its desirability and feasibility and thus ensuring a greater gain in terms of learning. MC allows for increasing self-regulation or self-programming to achieve the set goals. The effects of MCII on achieving goals are immediate and long-term. In addition, MCII also has an effect on self-discipline and self-confidence. The WISH method, inspired by MCII, is used in preparatory lessons for the workplace learning period as well as during the actual period of practical training itself. WISH consists of four steps: *Wens* (desire), *Inbeelden* (imagining), *Struikelblokken* (obstacles) and *Handelen* (action). The method aims for imprinting students with these four steps and stimulating them to apply these four steps in all large and small learning objectives during the period of workplace learning. The implementation of WISH in VET colleges shows good results (Klarus & Van Vlokhoven, 2014). Students learn to apply this method for their internship. Beyond developing specific learning objectives in the preparation phase at the regional VET college, the aim is that students learn how to apply the WISH method, so that they can use it during their internships and, in principle, for each learning objective they want to deploy on the job or at school. Both teachers at school as well as coaches at the workplace are trained in using these kinds of incentives and steering the learning process with the aim of stimulating agency. However, many VET schools and teachers do not pay much attention to stimulating agency and engagement, but expect the workplace to be motivational enough by itself.

## 11.6 Improving Workplace Learning as Part of the Vocational Curriculum

Improving the quality of workplace learning is a recurrent theme in Dutch discussions about VET (Bronneman-Helmers, 2006). Because WBL in Dutch VET is part of a formal learning trajectory leading to a qualification which is recognised on a national level and giving access to jobs on an occupational, rather than company level, many people think that it is not enough to trust on affordances and agency determined by individual companies or students only. So formal requirements for work based learning placements and apprenticeships are established and controlled. But in implementing a WBL structure in VET, there seem to be two serious ‘sticky’ problems: the quality differences of workplace learning itself (content, guidance, assessment) and the quality of the connection between workplace and school-based learning. In many cases workplace learning seems to take place separated from – rather than connected with – learning at school (Onstenk, 2003; Poortman, 2007). Both problems are discussed extensively, the main arguments will be presented in the next paragraphs.

### ***11.6.1 Quality Standards***

The discussion on the quality of workplaces for learning, both in the apprenticeship pathway and (even more) in school-based VET, is long and persistent. On policy level, this is tackled by the government as well as by national bodies and employer organisations, by updating regulation \designed to uphold the quality of training in apprenticeships in terms of content, guidance and assessment. To this end, financial incentives are given to companies. It appears, however, to be difficult to guarantee quality standards for work placement companies. This becomes an even more urgent issue during the periodical shortage (linked to economic cycles) of learning places, which makes it difficult to uphold standards.

Designing, steering and guiding learning in the workplace remains problematic (Nieuwenhuis et al., 2011; Onstenk, 2003; Poortman, 2007). The problems concern a lack of co-operation between the parties involved, a lack of control and evaluation of learning in the workplace by regional VET colleges, and insufficient possibilities for organisations to provide high-quality learning opportunities and high-quality coaching (Blokhuis, 2006; Nijhof & Nieuwenhuis, 2008; Poortman, 2007). The quality standards that are used, focus partly on the formal characteristics of the workplace as a learning environment, placing demands on appropriate work content suited to the qualification profile, or the availability of a workplace coach who is preferably trained. For the other part, standards are designed to strengthen the role of the educational institution in determining learning content and giving guidance on the work floor.

### ***11.6.2 Improving Guidance***

Connective work-based learning presupposes that students are not just sent out into working life, but that they receive coaching and guidance and that their learning is facilitated. Students are assigned a tutor at their educational institution and a mentor or trainer at the workplace. These guidance providers should regularly meet and talk to each other (Tynjälä, 2008). In reality, both in VET (Onstenk, 2003; Onstenk & Janmaat, 2006; Poortman, 2007) and higher professional education (Reenalda, 2011), school teachers often barely know the practice coach or even the company. Students are, in many cases, rarely visited by a teacher at the company. Most schools define objectives for the work-based learning period, but they are often very general and aim for work process knowledge and are not connected with theoretical knowledge. As schools feel they cannot control – or even know with any precision and certainty – what is happening at the workplace, they try to control and promote learning by giving school assignments. This takes place despite the fact that one of the oldest Dutch research projects on WBL (De Vries, 1988) already showed how this method can be counterproductive and interfere with real participation in work and teams.



In order to solve these problems, attempts are being made to intensify communication between teachers and workplace instructors, to strive for alignment of theory and practice, as well as to focus on developing guidance competencies of workplace learning mentors at schools and practice instructors in labour organisations. A large survey conducted among apprentices, commissioned by the association of students and apprentices in vocational education, revealed that, although apprentices state that learning in the workplace is, in most cases, very satisfying, preparation for work experience and school assignments to be done on the job, as well as guidance offered by the school is lacking in quality (JOB, 2005, 2012). There is often poor cooperation and interaction between the parties involved, resulting in lack of information, insufficient relevance of learning assignments, and inadequate programming and tuning of theory with practice (Blokhuis, 2006). Workplace learning, as part of a vocational education, is expected to deliver learning outcomes, as these are specified in the qualification document referred to in the training-employment contract. These objectives are expected to direct the activities conducted by the apprentices and their practice instructors and coaches and – at a distance – school mentors. However, actual workplace learning often involves more and different learning processes. The connection between a specific job and the more generic qualification is not always clear. The qualification profile includes a general description of an occupation related to it, describing vocational educational attainment goals (Onstenk & Janmaat, 2006).

Blokhuis (2006) developed and tested guidance guidelines, supporting the interaction between apprentices, mentors/coaches, and other colleagues. These guidelines distinguished four phases:

1. Orientation to the task (select a task, discuss with the student/apprentice, determine existing relevant knowledge, discuss the learning process, give instructions)
2. Preparation for the execution of the task (discuss observations, prepare together, provide necessary tools and materials)
3. Supervision and discussion of performance and progress
4. Improvement by repetition and reflection

Using these tools made practice coaches and fellow workers more aware of their guidance practices and enhanced the chances that high-quality consistent interaction with the apprentice would take place. These guidelines have now been adopted by a number of VET schools and companies.

### ***11.6.3 Connections Between School-Based and Work-Based Learning***

VET pathways are characterised by combining school- and work-based learning. In order to obtain optimal learning outcomes abstract codified knowledge acquired in vocational school has to be connected to actual practice in a specific workplace

(Guile & Griffiths, 2001). Learning in apprenticeship or practice periods should not be separated from learning through teaching in other courses, but should be related to it (Tynjälä, 2008). The apprentices have to adjust their knowledge, skills, and attitudes in order to perform a task in the way the workplace wants, or is used to having it done. The students or apprentices, in order to cross the boundaries between school and occupation, have to translate the language of the vocational school into the language of practice and vice versa, and should be supported in doing so.

Workplace learning in Dutch VET, through apprenticeships as well as school-based pathways, could offer good opportunities for what Fuller & Unwin (2003b) call expansive participation. Precondition for this is that facilities for deeper, more investigative, and imaginative learning are provided by the vocational school through learning programmes as well as by the organisation of apprenticeships through language and artefacts such as documents, tools, assignments, books or personal development plans (Blokhuis, 2006; Onstenk & Janmaat, 2006). These tools could be considered as boundary-crossing objects, helping to connect the school and workplace (Akkerman & Bakker, 2012).

Learners should be supported in their work experience programmes to promote understanding and use of the potential of school subjects as conceptual tools (Griffiths & Guile, 2003). They should be enabled to see the relationship between their workplace experience and their study programmes as part of a whole. Such connective relations and reflexive activities are often not realised in Dutch vocational education. There are many differences with respect to what are seen as close and effective connections between learning in school and learning in the workplace. Research shows that many practice coaches are unaware of the content and subjects taught at school (Onstenk & Janmaat, 2006), or, even worse, things taught at school are experienced by practice coaches as irrelevant for solving occupational problems (Poortman, 2007). The objective of deeper learning by apprentices is difficult to realise, although not necessarily more difficult than in school. Many school teachers do not know enough about vocational practice to help students understand the links. They do not visit workplaces where their students are placed. There is often little preparation for, or effective use of workplace learning experiences in school settings (Onstenk & Janmaat, 2006; Poortman, 2007). There is a lack of opportunities to experience different instances of vocational practice in order to understand the diversity of practices. By participating in different work organisations, it would be possible to develop a better understanding of the diversity of practices constituting a particular occupation. On the other hand, there is the danger that this increases the chance of superficial learning instead of deeper learning, because a student needs some time to get used to the workplace (learn the ropes) before being able to learn further.

Next to reflection, another strategy that could aid learning if supported by schools or companies is discussing experiences with other apprentices. However, too few teachers or coaches stimulate learners to consider and discuss the particular requirements of the different practices in which they have participated, in order to understand how vocational practice differs across workplaces (Billett, 2003). There is often little support for resituating existing knowledge and skills in new contexts.

The ‘coming back-to-school days’ are rarely used for exchanging experiences or relating these to theoretical concepts, but are used instead for additional teaching (Onstenk & Janmaat, 2006).

So, while in Dutch VET workplace learning is often seen as a way to motivate students and apprentices towards theory, theory itself is hardly used as a way to make better sense of work experiences. In other words, the way schools propose to use theory (looking for practices illustrating the theory instead of exploiting theory for practical questions) leads to a practice-theory integration problem. There are promising attempts to counter this danger by establishing more connective models, which are characterised by new practice and competence -oriented curricular approaches. There are a growing number of projects and practices where different patterns of interaction between employers and vocational schools are being developed, with the aim of improving the connection between learning in school and in the workplace and between developing competencies for new professionals and innovation in occupational practice (Onstenk & Janmaat, 2006). Curriculum content and didactic methods in vocational education are being challenged on several levels (Onstenk, 2001). Students ask for different approaches with regard to their backgrounds, characteristics, interests and preferred or used ways of learning. Additionally, societal developments also lay new demands on students who are the citizens of the future. The content and design of vocational education is also being challenged, more directly than general basic, secondary or higher education, by changes in organisations and occupations. Against this background of growing demands made by business as well as by students on vocational education (21st century skills), schools are innovating their courses, with respect to both content, responding to the new qualification structure, and to methods, responding to the need for broad occupational competence and learning skills, while also preparing students for an accelerating rate of change and a lifetime of learning. New insights into learning and instruction are now in circulation. In sum however, vocational education graduates must be able to select and interpret knowledge and information. They must be able to solve problems, plan and co-operate. In short, they need broad professional competence. In order to develop this in vocational education, an integrative vocational pedagogy, connecting learning in different settings, both school- and work-based, is necessary.

## **11.7 Organisation of Work Based Learning: Connecting Learning Places**

An integrative and connective pedagogy in the Dutch system, however, can only be realised in close partnership between educational institutions (vocational colleges and universities of applied science) and workplaces. Work-based learning should be planned in collaboration with workplaces. However, most coaches at workplaces barely know the content of the school-based part of the course. It is thus difficult to

construct shared goals and modes of action (Tynjälä, 2008). Consequently, cooperation between vocational schools and practice turns out to be a crucial, but often problematic factor (Onstenk, 2009; Onstenk & Janmaat, 2006; Onstenk & Blokhuis, 2007; Nieuwenhuis, Poortman & Reenalda, 2014).

More recently however, colleges in cooperation with companies have been trying to use opportunities for tailoring the curriculum to the needs of local companies. Work-based learning is seen as an important way for accomplishing this. There are many attempts to strengthen the relationship between vocational education and occupational practice by enlarging and improving the practical component of VET courses. Further, companies offering apprenticeships or traineeships have to be certified by the national sectoral bodies, that is, they have to fulfil formal requirements with regard to the content and quality (level) of work and the availability of guidance. The WEB prescribes that the apprentice, the regional VET college, and the labour organisation have to sign a training–employment contract. This contract specifies the period for learning at the workplace, the required coaching of the apprentice by the labour organisation during that period, and the learning aims for that period. School-based courses however, do not include such a labour contract.

To support connecting generic objectives and concrete learning experiences, there are strategies to enrich the accreditation process for Dutch apprenticeship places by developing sector data banks in which both data on content and on guidance are registered. Formal requirements are to be supplemented with more substantial ones, which take into account organisational aspects and quality of guidance. Because the quality of the guidance is difficult to regulate from the outside, the professional qualification of workplace coaches or mentors becomes the main measure of quality. Regional VET colleges and HPE institutions work more often with "preferred" training companies, making long-term agreements on numbers of students and investment in the quality of the guidance. This also enables VET schools to monitor learning opportunities much more closely (Onstenk & Janmaat, 2006).

There is an urgency for this monitoring, as according to the Law on Vocational Education, VET colleges are responsible for delivering the qualification, based on the requirements laid down by the government. Part of the learning occurs at companies that do not bear any formal responsibility for the learning outcomes, although they are critical in providing the learning results. VET colleges are responsible for the implementation of the contract as well as for assessing whether the learning aims are realised. The companies have to offer a learning environment and coach the apprentice. They have to ensure that there are opportunities to engage in the work that the course provides training for and that there is a coach with pedagogical skills available. They have to agree to communicate with the school about the performance of the student. At the workplace, the apprentice is trained or coached by a practical instructor. Other employees are involved only in case the apprentice asks them for help or observes them at work. A manager can facilitate that learning process by assigning a practical instructor to the apprentice and offering the apprentice the opportunity to practice and to participate in work processes (Blokhuis, 2006). The practical work supervisor (coach) also evaluates the apprentice's experiences and progress at work with the apprentice.

In the regional VET colleges, teachers are expected to help apprentices in acquiring the requisite knowledge and skills. There is also a teacher (mentor) responsible for guidance and monitoring the progress during the workplace learning periods, although this is mainly done from a distance and with very little actual communication and interaction. Nevertheless, in some cooperation projects, e.g., in nursing and care, VET teachers visit workplaces on a more regular basis. Finally, exchanging work and learning experiences with one's fellow apprentices also takes place at the college.

Until 2013 sectoral knowledge centres of vocational education represented the link between education and organised business and industrial sectors. Their first task was to translate changes in professional practice and new and rapidly changing requirements from the labour market into educational requirements (qualifications). Their second responsibility was to monitor and promote the quality of learning in professional practice. National bodies had to ensure that there are sufficient apprenticeships and work based learning places in certified companies. They encouraged and facilitated employers to thoroughly train their apprentices. Companies offering apprentice and trainee learning placements were regularly supervised by the bodies at the national level. In the new situation, as of 2013, one national organisation (the Vocational Education and business Board –SBB) is given the statutory duties regarding workplace learning and the qualification structure development and quality. The sectoral knowledge centres have disappeared, giving rise to the apprehension that the distance to the sectors and companies will thereby become even greater.

Within the framework of the renewal of vocational education, the objective is that companies become actual partners in the design (co-designers) and implementation (co-makers) of vocational education. This objective has turned out to be rather difficult to achieve; however, when it has succeeded, it has been evaluated very positively by schools as well as companies (Inspectorate of Education, 2007; Onstenk & Jannaat, 2006; Zitter & Hoeve, 2011). In the reverse direction, within the framework of the knowledge-based economy, it is stressed that regional VET colleges could and should play a more active role in safeguarding the employability of staff and innovation in work processes (Smulders et al., 2013).

A whole range of different forms of practical learning exist in vocational education nowadays. Next to the traditional apprentice or intern arrangements, other forms of cooperation between education and businesses have come into existence, such as equal partnerships between schools and companies, mostly in network relations with other stakeholders in the region. New concepts for the design of work-based learning, such as hybrid or simulated learning environments, offer new challenges for research and practice (Nieuwenhuis, Poortman & Reenalda, 2014). While older examples of such hybrid arrangements consist of integrated practice centres in the region and facility sharing or exploitation of common learning facilities, newer arrangements include the adoption of departments of companies and institutions as learning units (i.e. learning isles). In addition to a period in a 'real' workplace, there are new pedagogical solutions which aim at giving students an experience of authentic problems and procedures in working life. These include

simulated WBL pedagogic approaches such as problem-based learning (PBL), case-based learning and project-based learning. Zitter and Hoeve (2012) propose the concept of hybrid learning environments as a way to overcome the problematic nature of the transition between school and workplace in its wider societal context. They stress that hybrid learning environments seek to integrate and merge learning and working. An important underlying notion is that a hybrid learning environment crosses the traditional school boundaries into working life. Zitter and Hoeve see a growing number of what they define as “hybrid learning environments”, designed to combine formal, school-based learning with workplace experience. These learning environments are mostly in-school simulations or specific learning workplaces closely connected to VET or HPE schools. Furthermore, there are a number of projects in companies which also create a hybrid learning environment by enriching ‘real’ workplaces with extra guidance and the presence of teachers. In education and care sector jobs there are several such examples. The technical areas too offer more and more instances of hybrid learning environments, e.g., a national railways workshop in collaboration with a regional VET college. In a way, this can be seen as a revival of older forms of work-based learning in industrial company schools (e.g., Philips) or in-service training for nurses in hospitals. Many of these older forms disappeared in the ‘70s and ‘80s as a consequence of the economic crisis and the changing industrial landscape (e.g., disappearing shipyards), but also as a consequence of the monopoly of VET schools in delivering vocational qualifications.

### ***11.7.1 Learning Departments***

One good example of a hybrid learning environment (starting in 2009) is the phenomenon of the ‘learning department’ (*leerafdeling*) in the health sector. VET schools and health organisations (e.g., hospitals, elderly homes) work closely together to arrange these learning departments, which are a new form of work placement generally involving a group of 6-8 students or apprentices within a single department of an organisation. Around 150 healthcare institutions in the Netherlands have arranged such a learning department in cooperation with the regional VET colleges and HPE. In this kind of enriched work-based learning setting, practical experience can be shaped more deliberately than in the daily hustle and bustle of regular production processes (Van den Berg, De Jongh, & Streumer, 2011). Whereas most hybrid learning environments are situated within schools (Zitter & Hoeve, 2012), the learning department is a hybrid learning environment within a work organisation, in which students work with real customers, or real clients, and where both teachers and trainers are available for supervision and support. This seems like a promising solution for the recurring problems concerning the separation of theory and practice. The project is oriented towards school-based courses. A group of students in their practical period run the department. They engage in collaborative learning, involving all aspects (both subject knowledge and work process knowledge) of the

tasks in the department. The regional VET colleges and the labour organisations are together responsible for the quality, content and guidance of work-place learning in these learning departments. At the learning departments, students are coached by a teacher from school, by a workplace coach and by each other (since students often come from several levels, and from higher education). Part of the theory lessons are given by teachers of the regional college in the company. As teachers and coaches work together, there can – at least in principle- be more alignment in designing developmental tasks than in a regular apprenticeship.

The learning department is an interesting addition to effective learning situations in the practical period, which can form the backbone of a professional training course (Poortman & Graus, 2011). Because students run the department together, they can, for example, consult with and advise each other, which is more accessible than asking questions to a graduate supervisor. Some other aspects of the learning environment are also inviting, such as the guidance on individual learning objectives by coaches. These aspects are in line with the description of what 'beginners', 'advanced' and 'competent' student-workers need in their respective stages in terms of models and concepts from the theory and guidance by colleagues and teachers. Students at learning departments also explicitly exploit the possibility of reflecting on the school-acquired theoretical knowledge, e.g., on the education afternoons. Additionally, they have the opportunity to intensively and in collaboration with peers, develop their routines and to explore the limits of these, by running a real department with real concerns and real people. They are given the chance to bear responsibilities and become more self-steering. The experiences with the learning department show that there is definitely room for the joint design and realisation of innovative forms of such workplace learning. The school guides students in the learning department more intensively than in a regular internship. Theory lessons by teachers of the regional college are provided in the company. Teachers are required to regularly visit the workplace. However, although both the institution and the school (including the teachers involved) are enthusiastic about this arrangement, it is sometimes difficult for schools to have teachers present at the workplace. Lesson schedules are sometimes too inflexible to adapt to workplace needs. Further, although the institution delivers extra guidance on the job (compared to regular apprenticeships), it is sometimes unclear to teachers what their role is in the workplace. Nevertheless, the learning department is seen as a valuable way of organising and strengthening workplace learning. Research (Poortman & Graus, 2011; Streumer, 2010) shows that through this collaborative skills-based learning in a powerful learning climate, apprentices in learning departments show better learning outcomes than apprentices in regular companies. Evaluation of learning outcomes show that apprentices in these departments do develop work process knowledge, and get a higher degree of self-direction and autonomy. Further, a clear growth in the learning skills of apprentices is observed. Apprentices learn better how to plan and to cooperate, and develop a larger problem-solving ability.



## 11.8 Conclusion

This chapter sketches recent developments with regard to WBL in Dutch VET and HPE. There is a lively debate about expectations with regard to learning effects and outcomes. As a general conclusion it can be stated that workplace learning in both school- and work-based pathways in Dutch VET, as well as in higher professional education, does indeed give an indispensable contribution to the development of broad occupational competency. However, this does not take place automatically, particularly not in all aspects and contents nor in all cases. Learning in different settings in work as well as in school, offers a variety of possibilities to apply and develop knowledge and skills, thereby contributing to the capacity to adapt what has been learned to different situations, which is a key benchmark of rich learning in vocational education.

Scientific literature on WBL (both international and Dutch) is mostly descriptive and theoretical, resulting in fragmented empirical evidence in this regard. The connection between workplace learning and school-based learning as part of the integrated development of vocational competencies is essential, but often only partly realised. New content and didactics at school, as well as different and more intensive patterns of interaction between companies and vocational schools, are being developed to improve the connection between learning in school and in the workplace. Working together, employers and vocational schools can strive for high-quality outcomes.

The inviting quality of workplaces (affordances) as learning environments varies strongly, so opportunities to participate in learning varies among apprenticeships (Billett, 2001, 2006; Poortman, 2007). This is due to a combination of organisational, structural, cultural and pedagogical factors. Students too differ in the ways they are able and willing to use or even create learning opportunities (agency).

Several organisational models have been developed to aid in the monitoring and enhancement of the quality of workplace learning in Dutch VET by schools, national bodies, and support organisations. Workplace learning is an important way to concretise and 'tailor' the new, broad qualifications in Dutch VET. Workplace learning in many cases can be rich and is also much appreciated by apprentices and students. However, many schools seem to take workplace learning for granted. Research shows that the quality of workplace learning is not guaranteed and that learning in school and learning in the workplace are not sufficiently integrated. Different kinds of learning outcomes (e.g., disciplinary knowledge, tacit knowledge and work process knowledge) are often badly connected.

For this reason, VET innovation should focus on quality improvement and on better connecting work-based learning and school-based learning, i.e. by establishing quality criteria for work-based learning places, by enriching learning in the workplace and by designing work-based curricula which integrate different learning places as well as learning experiences. Vocational schools in the Netherlands should pay more attention to structuring, supporting and assessing communication processes between schools, companies/work coaches and students/apprentices about

what could and should be learned in a specific learning workplace, what the apprentice would like to learn, how this fits into the requirements of the qualification, and, of course, what actually has been learned. Also, the responsibilities and roles of all parties involved should be debated and delineated. As part of this debate, it should be established whether a company is at least co-responsible for the delivered learning outcomes and performance.

There is a need to establish more connective relationships between workplace learning and learning in schools, not only to ensure that practical experience helps to explain the meaning and value of concepts, but also, and more importantly, that concepts and theoretical knowledge can serve as a tool to interpret and change the world. Learners in vocational and professional education, from pre-vocational to higher professional education, and in both school- and work-based pathways, should be provided ample opportunity to make their practical knowledge explicit and connect it to earlier practical encounters. The other way around, they should be supported in developing the ability to interpret new situations in the workplace in light of concepts they have acquired in school (or adapt these concepts), as well as in dealing with counter-interpretations.

Apprentices and students must be prepared for contributing to the development of new knowledge and new social practices by confronting them early on with new developments and issues in companies. Otherwise there is the risk of limiting educational objectives to adaptation to existing practices, rather than developing an intellectual basis for criticising existing work practices and taking responsibility for working with others to co-shape work by conceiving, and where possible implementing alternatives. Lack of this basis limits the possibilities for the contribution of WBL in VET to both personal growth and to social and economic development and innovation. Basing education on practical questions and issues as well as relevant concepts and theory to solve problems seems a strong strategy to connect practice and theory.

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# Chapter 12

## Assessment in Dutch Vocational Education: Overview and Tensions of the Past 15 Years

Liesbeth Baartman and Judith Gulikers

### 12.1 Introduction

This chapter describes the developments in the area of assessment in vocational education (VET: senior secondary vocational education or in Dutch: “MBO”) in the Netherlands over the past 15 years. It describes the changes occurring within that timespan from the perspective of the implementation of the Adult and Vocational Education Act (Wet Educatie en Beroepsonderwijs, WEB) in 1996 up until 2013. With the introduction of this Act, central examinations in VET were abandoned and VET institutions became responsible for their assessment practices, including examinations (Nijhof, 2008). Additionally, constructivist views on learning gained more attention, in which active and authentic learning in a self-directed and self-regulated manner were given great prominence (Elshout-Mohr, Oostdam, & Overmaat, 2002). As student learning is largely determined by the way it is assessed, these constructivist views on learning had wide ranging implications for assessment practices in VET curricula (Elshout-Mohr et al., 2002; Tillema, Kessels, & Meijers, 2000).

This introduction, in overview, describes two developments that heavily influenced assessment practices in VET during the past 15 years. First, the developments in the national qualification structure for VET that specifies the end goals of VET and forms the basis for the development of curricula and assessments. Second, the changes in the system of quality assurance of the VET assessments. Following this,

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five tensions are advanced and described that repeatedly arose in discussions regarding VET assessment in both research and practice. To identify and delineate these five tensions, an overview is provided of the key authors in assessment in vocational education in the Netherlands. Their scientific publications, together with policy documents of the past 15 years (e.g., about the evaluation of the Adult and Vocational Education Act and developments in the Inspectorate) formed the basis for the formulation of the tensions. The tensions were chosen and described in such a way that they present five distinguishable issues. These tensions are: (1) new goals require new assessment methods, (2) assessment as a one-shot measurement versus a coherent programme appraisal, (3) the increased involvement of the labour market in VET, (4) securing a balance between governmental control and VET institutions' responsibility in developing and quality assuring assessments, and (5) realising the balance between the formative and summative functions of assessment. In the concluding section, the current status quo in VET assessment practices is described as the "Process Architecture Assessment", a schematic representation of the entire assessment process in VET.

## 12.2 Changes in National Qualification Structure

During the last 15 years, the national qualification structure of vocational education has drastically changed in the Netherlands, profoundly influencing assessment practices in VET. One of the goals of the government legislation entitled the Adult and Vocational Education Act was to improve the alignment between VET and the labour market. This means that VET should not only be concerned with occupation-specific knowledge and skills, but also lifelong learning skills and capacities to function in changing circumstances and working environments (Brandsma, 2004; Tillema et al., 2000). One of the measures to realise these objectives was the introduction of a national qualification structure for VET, which describes and pre-specifies the goals of the different educational trajectories in Dutch VET in vocational qualification profiles. A vocational qualification profile is a cohesive set of key skills (i.e. cognitive, interactive, psychomotor and communicative), officially recognised by the government. These profiles form the basis for continuing employability within an occupation or related occupations. The wider policy aims and expectations with regard to the qualification structure encompasses increasing the accessibility and efficiency of VET by offering opportunities for shortening learning pathways and adapting educational trajectories based on assessment of prior learning (Brandsma, 2004; Joosten-ten Brinke, Sluijsmans, Brand-Gruwel, & Jochems, 2008).

The development of the national qualification structure commenced with the establishment of a large number of detailed and specific qualification profiles (approximately 800) that were very specific to an educational trajectory and occupation. These profiles included learning outcomes in terms of specific elements of



knowledge and sometimes skills, mostly not comprehensive and not in relation to one another (Mulder, Nieuwenhuis & van Berkel, 2004). Complaints arose that these qualification profiles were too specific and detailed, leading to too many specific and narrow courses (Borghans & Heijke, 2004), which inhibited flexibility. They were not understood by the labour market that wanted more integrated or holistic competencies (Mulder et al., 2004).

These complaints led to the development of more labour-market driven competence-based qualification profiles. This development started in 1999 (ACOA, 1999) and resulted in the first competence-based profiles around 2005/2006. The new profiles were obliged for all educational trajectories by 2010 (later postponed to 2015). The competence-based profiles include both vocation-related as well as more societal-related competencies for lifelong learning. Competence was viewed from the perspective of integrated occupationalism (Mulder, 2014). This means that, instead of focusing on narrow job profiles, it is based on notions of holistic, generic and integrated sets of knowledge, skills and attitudes which are needed in core occupational roles and situations. To increase the flexibility of VET and its graduates and ensure more standardised profiles, later generations of qualification profiles (from 2008 on) were based on a Universal Competence Framework (UCF, Bartram, 2012) premised on Bartram's (2005) evidence-based work identifying a factor structure of eight "great" competencies that can be further divided into 20 dimensions and up to 120 components. Based on this framework, a competence framework for Dutch VET was developed consisting of 25 competencies. These 25 competencies became the central organising framework for the qualification profiles. Examples of these competencies are applying professional expertise, customer-oriented working, collaboration, decision-making and initiating action, and planning and organising. Within each qualification profile, these competencies are related to occupation-specific core tasks (e.g., dealing with animals) and work processes (e.g., feeding animals, handling animals). By linking the competencies to core tasks and processes, the relationship between the competence-based profiles and professional practice was made more explicit and recognisable.

The generic, transferable and interchangeable character of the competence-based qualification structure was presented as its main strength. However, this turned out to be its greatest pitfall. VET institutions trialled the generic competencies approach and mainly experienced them as "empty" concepts (Nijhof, 2008). The word "competence" was polluted with too many different interpretations and VET institutions mainly focused on assessment of performance, neglecting knowledge and attitudes as important components of competence (Ministry of Education, 2011). As a consequence, VET institutions as well as employers, policy makers and researchers re-engaged with the discussion about the knowledge component of being a professional (e.g. Elshout-Mohr et al., 2002; Schaap, de Bruijn, van der Schaaf, & Kirschner, 2009). In 2011, the term "competence-based qualification profile" was changed to "professionally-oriented qualification profile" in which professional core tasks and work processes as well as underlying knowledge, skills and professional attitude elements are explicitly mentioned as desired learning outcomes of VET. Competence

is now advanced as “situated professionalism” (Mulder, 2014) meaning that competence only gets meaning within a certain context. Core tasks and work processes of a specific occupation give meaning to a particular form of competence and, therefore, offers better assessment measures than generic competencies.

### 12.3 Changes in the System of Quality Control in VET

One of the core aims of the Adult and Vocational Education Act was to provide VET institutions with more autonomy for their curriculum and assessments. It aimed to stimulate greater self-steering and, thus, more responsibility for VET institutions to set up their own assessment programmes and monitor their quality. By means of periodic self-evaluations (internal and external), VET institutions have to provide proof of the quality of their assessments and the government can audit the soundness of the assessments and force institutions to carry out adjustments when necessary. Currently, the Dutch Inspectorate of Education (IoE) emphasizes these self-evaluations in that a proper self-evaluation may result in a less extensive external evaluation (Janssens & Van Amelsvoort, 2008).

When the Act was implemented in 1996, a free market for evaluating assessment quality was opened. This approach subsequently transformed into a bureaucratic system with institutions having to pay to have their assessments validated and receiving poor service – all with little impact on the quality of the assessments themselves (Nieuwenhuis, Mulder, & Van Berkel, 2004). In 1999 and 2000, the IoE concluded that, for example, formative assessments were being used as summative ones and most assessments were not content valid. Paper-and-pencil tests consisting of theoretical questions were most often used, even in cases where other skills were supposed to be tested. On the other hand, the VET institutions reported an increased awareness of the importance of the quality of assessments. Therefore the parliament enforced a new system of quality assurance for VET assessments: the KCE (Quality Centre for Examinations) was established in 2001. From 2003 on, the quality of all VET assessments was certified by the KCE, supervised by the Inspectorate of Education (IoE), thereby executing Ministerial responsibility.

In response to the problematic quality of the assessments, the KCE set up a standard system consisting of elaborated lists of detailed evaluation items. These were ticked off based on written material of their assessment practice the VET institutions had to hand in. The KCE only examined the summative assessments (Mulder et al., 2004) and granted a quality judgment that could have as great an impact as to retreat the authority to officially certify students. The KCE was set up to assure external quality control of the VET assessments, but also to stimulate innovations and improvement. This combination of both external control and stimulation of innovation proved difficult (e.g., Baartman, Prins et al., 2007). By 2007, the Minister of Education decided to dissolve the KCE due to the many complaints from VET

institutions regarding the functioning and the detrimental, instead of stimulating, impact of the KCE on VET assessments. The quality assurance of VET assessments was placed under direct supervision of the IoE.

After the KCE period, the IoE struggled for a number of years with finding better ways to externally moderate VET assessments, resulting in an almost yearly changing of quality standards and controlling procedures. VET institutions also struggled with the freedom for self-steering on the one hand, but looked at the IoE for guidance and clear quality standards on the other hand (Baartman, Prins et al., 2007). Regarding the controlling procedures, a system of “proportional supervision” was established in 2002 (Janssens & Van Amelsvoort, 2008), in which the frequency and form of inspections is based on the quality and risks of decline in quality. VET institutions that are poorly performing are inspected sooner and more often. The approach is now more generic and holistic, consisting of only three standards:

Standard 1: Assessment methods are aligned with the exit requirements (i.e., the qualification profile) and comply with quality criteria for assessments.

Standard 2: Assessment processes during performance or test taking and judgment are valid and sound.

Standard 3: Certification is valid and ensured.

These three standards are elaborated in a small number of more holistic indicators that are more inclusive and cannot be just ticked-off in a binary fashion (Yes/No). For example, indicator 1.1. states: “The distinction between formative and summative assessments” and indicator 1.5 is “Assessment procedure”. Every indicator is accompanied by a portrait of the ideal situation. When the assessment practices resemble a portrait to large extent, the indicator is “ticked off”. The focus is still on the summative part of the assessments, but as can be seen in indicator 1.1., the IoE requires insights into the formative part of the assessment as well. This is viewed as preparatory for (and prerequisite for the quality of) the summative part. Moreover, the new standards equally value the assessment methods (Standard 1) and the assessment process or implementation (Standard 2). Regarding the evaluation process, VET institutions first have to establish a self-evaluation of their assessment system based on the three IoE standards. Then, the IoE always visits the institution to actually see the assessments and talk to different stakeholders (i.e. teachers, head masters and students) or ask for any other additional information. All these data are used to compare the assessments with the portraits of the indicators to come to an advice and judgement regarding assessment quality.

In all, the developments in the national qualification structure for VET as well as the system of quality control had a great impact on the assessment practices in the VET institutions. Below, we describe five tensions in VET assessment practices that arose as a result of the policy transformations described above. We describe how VET institutions try to address these transformations and how scientific research influenced the discussions around the tensions.

### ***12.3.1 Tension 1: New End Goals Require New Assessment Methods***

All changes in the national qualification structure outlined above were strongly directed by an intention to decrease the gap between VET and the labour market. The (new) qualification profiles only describe the end goals or “what” of an educational trajectory. VET institutions are free to decide on the “how” of assessment: the assessment methods they actually use to determine these end goals. This meant that they could either develop assessments themselves, or they could buy them from organisations that are specialised in test construction (Mulder et al., 2004). Both these intentions proved to be more difficult than anticipated. This tension, therefore, relates to the development of new assessment methods that are more fit to assess the changing end goals of VET.

A development process was observed in which VET institutions attempt to adjust their assessment methods to the changing requirements in the national qualification structure. This adjustment is related to the content validity of the assessments or the coverage of the end goals (Baartman, Bastiaens et al., 2007; Baartman, Kloppenburg, & Prins, 2013) or the fitness for purpose of the assessments (van der Vleuten et al., 2012). In an evaluative study of the first years of the Adult and Vocational Education Act, Mulder and colleagues (Mulder et al., 2004) showed that all VET institutions mainly used written tests, irrespective of their teaching approaches and use of on-the-job and off-the-job training. The argument was that the standards for these tests are clear, in contrast to practical assessments. New assessment practices did not fit the well-known psychometric quality criteria for testing and especially reliability (Baartman, Bastiaens et al., 2007) and teachers did not have much experience in developing other tests than written knowledge tests.

The development of the competence-based qualification profiles and the more constructivist view of learning in VET (Biemans, Nieuwenhuis, Poell, Mulder, & Wesselink, 2004; De Bruijn & Leeman, 2011), led VET institutions to reconsider their assessment practices (Tillema et al., 2000). The transition to a constructivist view on learning was accompanied by a transformation of assessment practices that focussed more on individualized, student-centred approaches and made use of authentic situations (Elshout-Mohr et al., 2002). Competence, in the Dutch context, refers to the attributes that enable a person to handle complex professional tasks in an appropriate, process- and product-oriented manner (Westera, 2001). This resulted in an increase of authentic performance assessment (Gulikers, Bastians, & Kirschner, 2004; Klarus, 2000). These assessments were often conducted on-the-job, requiring students to show their ability to perform a role or complex task in an authentic professional context. However, schools struggled with designing authentic assessments based on the very generic description of the 25 competencies in the qualification profiles. These made it difficult to formulate performance indicators for making the assessments valid and reliable (Nijhof, 2008). This difficulty resulted either in combining them with a large number of specific, often trivial, functional performance criteria or in leaving the performance assessments fully open resulting in unreliable

and invalid, completely unstandardized and individualised assessments, based on the assessors 'gut feeling' (Elshout-Mohr et al., 2002; Van der Vleuten, 1996). Instead of taking the generic competencies as a reference point for developing assessments, the core tasks and work processes allowed for more fruitful discussions on authentic learning settings and assessment tasks. However, the ongoing reduction of the number of qualification profiles, making them broader and less vocation specific, challenged this approach again. The broader profiles provide less clear handholds for performance criteria, but grant greater freedom to individual VET institutions to adjust their assessments to continuing developments in the labour market and also assess flexibility and the capacity to deal with new situations (i.e., transfer, continuous recontextualisation; Van Oers, 1998).

Beyond an increase in performance assessments, the competence-based qualification profiles, and later also the professionally-oriented qualification profiles, resulted in new assessment methods that allow students to demonstrate their learning process (Roelofs, 2006), also in terms of development over a longer period of time, and their ability to reflect on their own functioning (Dierick & Dochy, 2001; Elshout-Mohr et al., 2002). For example, portfolios are increasingly used as a longitudinal assessment that gives insight into both the students' learning process and the eventual products of their actions. The increased focus on students' learning processes as part of the assessments is also visible in studies into peer-assessment and self-assessment (Dochy, Segers, & Sluijsmans, 1999). These studies show that students who engage in self- or peer-assessment tend to score higher on other tests, reflect more on the quality of their work and show more responsibility for their learning process. However, these studies are more often conducted in the higher education context than in the VET context. A final important change regarding assessment methods in VET relates to the purpose of assessment to prepare students for lifelong learning and to increase the accessibility of VET using Assessments of Prior Learning (APL). Studies into APL show how procedures have been developed to assess and credit prior learning experiences, in which formal, non-formal and informal learning are recognized. Most procedures use a combination of methods to provide evidence of prior learning and require a high level of responsibility from learners (Joosten-ten Brinke et al., 2008). In 2001, the Knowledge Centre for Assessment of Prior Learning was founded by the Ministry of Education to develop APL methods, procedures and trainings that guarantee high external legitimacy for employers and society. In an APL procedure, participants can obtain a qualification based on relevant formal, non-formal or informal (work) experience. They demonstrate their competencies against a certain qualification profile in a portfolio and a criterion-based interview, which is judged by an independent assessor or assessment panel and can lead to (parts of) a qualification or an exemption from part of the assessments.

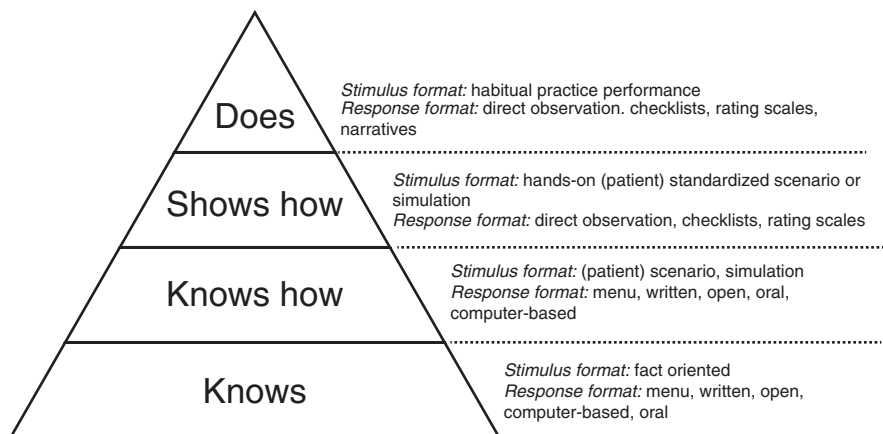
During the time of the less-specified, generic competence-based qualification profiles, complaints about the lack of standardization and rigorous check on students' knowledge base in, for example, portfolio assessments emerged (Elshout-Mohr et al., 2002). The development towards professionally-oriented profiles in which knowledge, skills and professional attitudes are all used in professional core

tasks and work processes caused the pendulum to swing back from using mainly performance assessments, to also again allowing tests of underlying knowledge and/or skills. These are now again appreciated as crucial elements of assessing professional competence (Miller, 1990; Schaap et al., 2009). In this vein, the renewed attention for national assessments of basic skills like mathematics and languages is recognizable as well. Students and graduates were found to be deficit in these basic skills, which are argued to be pre-conditional for success in all vocational courses. Researchers, however, question this radical policy shift and the conflation of basic skills.

In sum, this tension describes how VET institutions addressed the challenge to develop and use assessment methods that validly measure the changing content of the qualification profiles. Because of the reduction in the number of profiles, they also became broader and less occupation-specific. A development can be observed from the assessment of separate knowledge and skills, to very generic competence, vocation specific core tasks and work processes, towards renewed attention for the assessment of knowledge.

### ***12.3.2 Tension 2: Assessment as a Single Measurement Versus a Coherent Programme***

The creation of new assessment methods was accompanied by another development: the discussion around assessment programmes. Discussions about the concept of “competence” both in VET institutions and scientific research resulted in the realization that competence cannot be adequately assessed using single assessment methods, be it knowledge tests or performance assessments (Baartman, Bastiaens et al., 2007; Van der Vleuten, 1996). For example, Elshout-Mohr and colleagues (Elshout-Mohr et al., 2002) claim that teachers and students valued the presentation of critical professional situations in a portfolio, but pointed out that other assessment methods, such as conventional knowledge tests, are much more adequate in measuring a sufficient coverage of the knowledge domain. Currently, VET institutions all require a mix of assessment methods or an assessment programme. When it comes to developing assessment programmes, Van der Vleuten and colleagues (1996, 2010, 2012) describe four classes of assessment methods that all contribute to the measurement of competence: multiple choice questions, written simulations or case-based assessment, learning process measures and live simulations. Often, Miller’s pyramid (Miller, 1990) is used to classify and select these assessment methods. Miller makes a connection between the content of the assessment (“the what”) and the assessment methods that are fit to measure this content (“the how”). He distinguishes between assessing “knows”, “knows how”, “shows how” and “does” (see Fig. 12.1), in which the assessment methods become increasingly more authentic and complex. An assessment programme in VET should incorporate assessment methods at all layers of this pyramid.



**Fig. 12.1** Miller's pyramid (Miller, 1990)

Research shows several arguments to develop assessment programmes in VET (e.g., Van der Vleuten et al., 2010, 2012). First, competence cannot be assessed using single assessments and the validity or content coverage of assessment is, therefore, determined by all assessment methods in the curriculum. Second, generalizability theory shows that students' performance on (authentic) professional tasks is highly task-specific: a student's performance on one task has little predictive value for the performance on another task. This outcome is comparable to transfer problems observed in many studies (e.g., Tuomi-Gröhn & Engeström, 2003). For assessment, this implies that large samples of professional tasks are needed and decisions about students' competence should be based on longitudinal measurement in assessment programmes. Third, assessment programmes can be deliberately used to steer student learning across the curriculum (Boud, 2000). For example, students can take along feedback and new learning goals to more complex tasks during their learning career. Finally, research shows that what is being measured depends more on the content of the method or task than any characteristic of the method itself (van der Vleuten, 1996). For example, a multiple choice question does not measure factual knowledge because it requires a selection from a list of options, but because the question probes for factual knowledge. In the same way, a criterion-based interview based on critical professional situations does not assess competence per se, because what is actually being measured depends on the questions asked by the assessors.

Altogether, new goals to be assessed stimulated the use of new and more diverse assessment methods. Research into assessment programmes arose from problems experienced with different single assessment methods and, particularly, from the realisation that competence assessment inherently involves more subjectivity and that therefore reliability depends on a large sample of methods or tasks (instead of on objectivity). In this sense, Van der Vleuten and Schuwirth (2005) argue that



assessment is not a measurement problem, but an instructional design problem: just like a curriculum, an assessment programme needs to be planned, prepared, implemented, co-ordinated, evaluated and improved. In an assessment programme, the stronger and weaker aspects of assessment methods can compensate: “no method can do it all” (Van der Vleuten et al., 2010). When attention is concentrated upon all assessment methods together in a complete educational programme, the reliability pressure on low-stake assessments can be reduced and the resources freed up can be invested in the development of costly and reliable summative assessments. Baartman, Bastiaens et al. (2007) argue that in Competence Assessment Programmes or CAPs newer forms of assessment are not regarded as alternative to traditional tests, but as complementary to them. Baartman and colleagues (2011) also provide some examples of assessment programmes and their quality in Dutch VET, showing how methods at diverse layers of Miller’s (Miller, 1990) pyramid can be combined in a coherent programme of activities. This study also shows differences between assessment programmes in VET institutions: some use mainly performance assessment and knowledge is not separately assessed, while other institutions do use separate knowledge tests or experiment with the use of portfolios.

In sum, tension 2 shows how VET institutions and scientific research both turned to the idea of assessment programmes, in addition to single assessment methods. This shift was caused by the fact that the goals of VET were formulated in terms of competences, and the realization that competence cannot be adequately assessed using single assessment methods. Interestingly, the idea of assessment programmes has not been explicitly addressed in policy decisions and the IoE does not determine assessment quality at the programme level specifically. All VET institutions are required to combine different assessment methods within their assessment programme assessing the whole qualification profile, but how they do this, using what kind of assessment methods, is at the discretion of educational practitioners.

### ***12.3.3 Tension 3: Involvement of the Work Field in VET Assessments***

For both VET institutions and external quality control bodies (KCE and later the IoE) authentic assessments and the involvement of the work field have become more important. However, companies often want students to acquire specific competencies that are directly applicable in the specific company’s activities. Schools, conversely, want flexibility and preparation for the labour market in general (Borghans & Heijke, 2004; Mulder et al., 2004). VET cannot and should not strive for the fulfilment of all demands made by employers alone, but needs to equip students with transferable capabilities and lifelong learning skills that allow them to flexibly adapt to new situations (Nijhof, 2008). However, these two requirements have inherent tensions. When it comes to the preparation for a specific vocation, any company or assessment at the workplace only partially represents the vocational field a

qualification profile is supposed to cover. Assessments in these specific situations permit judgements about a student's capabilities to work in this specific vocational context, it does not stimulate nor assess a student's capability to recontextualize and transfer to different situations (van Oers, 1998). To combine both, the more general qualification profiles (i.e. those aimed at a larger number of vocations) thus require a careful selection of authentic assessments and companies to adequately represent the whole breadth of the profile. This proved to be difficult, because the merging of the qualification profiles was only partially steered by "family relations" in actual vocations in the labour market, but mainly by curricular consideration such as common subjects.

Already at the time of the introduction of the Adult and Vocational Education Act in 1996, VET aimed at better addressing the needs of the labour market. However, there was little to no collaboration between schools and the local labour market in defining outcomes, assessment methods or conducting assessments. With the implementation of the competence-based qualification profiles, the number of authentic tasks and assessments increased drastically (Gulikers et al., 2004). The labour market got more directly involved in setting up and validating the qualification profiles: the "what" of curricula and assessments. Since 2011, this shared responsibility has further increased through the provision of "examination profiles". In each VET sector (i.e., health, economics etc.), VET institutions, in direct collaboration with labour market representatives, described guidelines for "how" the assessment in the VET sector should be designed, enacted and moderated. Schools and labour market companies signed up agreements with respect to: (1) how the labour market companies are involved in the design, validation and/or actual implementation of the assessments (2) content and coverage of the assessments, and (3) quality improvement and professional development. For example, every examination profile described what working processes of the qualification profile should be assessed via authentic assessments, or what knowledge elements need to be separately assessed. Next to agreements on how the assessment should take place, the third aspect of the examination profiles shows the increased responsibility of schools in quality assuring and structurally improving their assessments. Setting up agreements with labour market representatives increases the external legitimacy of the assessment for the labour market and society.

The concept of "authentic assessments" became a hot item in VET. Authentic assessments are crucial in vocational curricula because they confront students with professional situations, in which they need to show the same competencies and underlying thinking processes as professionals would in that same situation (Gulikers et al., 2004; Klarus, 2000). This emphasis on authenticity again shows the importance of an adequate selection of professional tasks for assessment purposes, because these tasks need to represent the breadth of the qualification profile (Van der Vleuten et al., 2010). In Dutch VET, learning and working are intertwined from the first year on, meaning that students are immediately confronted with professional tasks at their educational level. To increase the authenticity of their assessments, VET institutions mostly 'just transferred' their assessments to these workplaces and less attention was paid to the representativeness of the workplaces or assessment tasks for a qualification profile. Certainly during the first years of the

WEB, school hardly intervened during workplace assessments (Mulder et al., 2004). However, this did not automatically lead to good and high quality authentic assessments (Mulder et al., 2004; Poortman, 2007). The content of work-based learning and assessment depends greatly on the characteristics of the job, the company and the competencies of the coach in the company. VET institutions equalled authentic assessments with workplace assessments. However, Gulikers and colleagues (2004) showed that authentic assessment entails much more than only the physical context (i.e., the workplace) where the assessment is conducted. They developed a five-dimensional framework describing the authenticity of assessments in which also the assessment task, the social context, the results and criteria should be representative of professional work situations. These assessment characteristics are not often considered by VET institutions or workplace supervisors. Since 2007, the VET council embraced the wider view on authentic assessment to stimulate and require schools to improve their authentic assessment practices both in school and in the workplace.

Concluding, the collaboration and agreements between VET institutions and companies is increasing and these agreements offer VET institutions more external legitimacy. However, the responsibility for all (summative) assessments will remain with the educational institution for the foreseeable future. The reduction and merging of qualification profiles causes new tensions. On the one hand, it increases the transparency of the educational trajectories in VET and provides opportunities to prepare students for wider possibilities in the labour market. On the other hand, for authentic assessment and assessment in workplaces, principles on the level of assessment programmes (see tension 2) need to be determined to adequately select assessment tasks that cover the breadth of these broader qualification profiles.

#### ***12.3.4 Tension 4: Between Governmental Control and School Responsibility***

Diplomas are formal statements of competence, in which all relevant actors should have confidence. Diplomas and certificates should contain information on the actual competencies of a potential employee. Also, the extent to which employers appreciate diplomas determines the opportunities for students to secure a job. This shows the importance of the societal confidence in (VET) diplomas. The question is, what kind of control best serves this social confidence? The developments in the quality control system in VET show a tension in balancing between governmental control, standardization and national assessments on the one hand, and autonomy and responsibility for VET institutions on the other hand.

A first aspect of this tension relates to the increased responsibility VET institutions were awarded with the introduction of the Adult and Vocational Education Act. VET institutions have become responsible for their own choices, including developing their own assessments and to account for these choices towards the KCE or IoE.

They have to prove they can cope with the autonomy they have by law, entailing tasks that VET institutions were not familiar with. After the introduction of the Act, they tended to look at the KCE or IoE to “tell them what to do”, whereas these quality control boards were not used to actually award freedom and responsibility to VET institutions and tended to enforce their standards without involving the institutions as equal discussion partners. External evaluation by the KCE or IoE, with severe consequences and incentives, was intended to be a natural complement of the VET institutions’ autonomy and a stimulant for assessment quality (Mulder et al., 2004). However, many schools felt trapped by national regulations, although the Act actually aimed to stimulate their autonomy: perception and reality were not aligned. In the end, the predominant function of the IoE is external evaluation, and accountability. This evaluation hampers the internal function of VET self-evaluations serving the purpose of improvement (Janssen & Van Amelsvoort, 2008), an issue found in countries across the world (Popham, 2008).

Second, VET institutions were not experienced in carrying out self-evaluations. Studies of Dutch VET indicate that institutions find it difficult to substantiate the quality of their assessment decisions, even with appropriate and strong quality evidence (Baartman, Prins et al., 2007). However, VET institutions increasingly value the use of self-evaluations for internal quality improvement and research in Dutch VET shows that self-evaluations are of added value. For example, explicating the assessment practices in the teacher team and involving key stakeholders result in more concrete and elaborate self-evaluations and more ideas for improvement of assessment practices (Gulikers, Baartman, & Biemans, 2010). Additionally, self-evaluations and especially team discussions about assessment practices lead to increased awareness of assessment quality and shared understanding among assessors (Baartman, Prins et al., 2007).

A third aspect of this tension is the quality criteria used to evaluate assessment methods in VET. There are several conditions for establishing an assessment system that will provide employers with confidence in the outcome of VET (Mulder et al., 2004): the assessments have to be valid and reliable, the meaning of the diplomas has to be obvious and transparent, and the system has to be cost-effective. From the perspective of VET institutions, assessment has an impact on student learning and teaching strategies - stressing the formative function of assessments - and teachers should accept and have confidence in assessment methods to implement and use them as planned. From the students’ perspective, fairness is most important. Quality criteria dilemmas were discussed in both the changing standards of the KCE and later IoE and in scientific research (e.g., Baartman, Bastiaens et al., 2007; Dierick & Dochy, 2001). Discussions arose about what constitutes assessment quality for paper-and-pencil tests, for “newer” assessment methods described in tension 1 as well as for assessment programmes as a whole (Baartman, Bastiaens, Kirschner, & van der Vleuten, 2006; Wools, Sanders, Eggen, Baartman, & Roelofs, 2011). This discussion is not surprising, as assessing competence at the higher layers of Miller’s pyramid (1990) necessarily involves a domain expert’s judgment and the main doubts about the reliability of competence assessment in VET pertain just this reliance on human subjective judgments (Baartman, Bastiaens et al., 2007).

Van der Vleuten and Schuwirth (Van der Vleuten & Schuwirth, 2005) argued that reliability does not depend on structuring or standardization, but on sampling, put forward as an argument for assessment programmes. With the development of broader qualification profiles, this sampling becomes more difficult as the assessment tasks have to address a broader spectrum of criteria to be assessed. Other sources of variability challenging the reliability of assessments such as differences between assessors are usually better controlled, for example by training assessors and using simple and transparent scoring rubrics, clear protocols and creating shared ownership of standards (Sluijsmans, Straetmans, & Van Merriënboer, 2008). Assuring the reliability of competence assessment, thus, requires a great amount of qualitative and quantitative information from different sources, as well as professional judgment of these sources by multiple assessors.

Besides reliability, another quality criterion for assessments in VET that was heavily debated is the formative function of assessment. Constructivist views on learning and new assessment methods focusing on students' learning process, development and reflection were not incorporated in psychometric quality criteria like validity and reliability (Baartman, Bastiaens et al., 2007; Dierick & Dochy, 2001). Baartman et al. (2006) developed a new framework of quality criteria for assessment programmes in VET, in which this formative function was explicitly addressed. These quality criteria expand the criteria of validity and reliability (which are still as important as they were before) by adding quality criteria that focus on the connection between assessment and learning, such as the meaningfulness of assessments, the effect on students' learning processes and the stimulation of self-regulated learning.

In sum, VET institutions as well as controlling bodies (KCE and IoE) still struggle with finding an appropriate balance between external, governmental control and school responsibility and finding an appropriate set of quality criteria and procedures to assure VET assessment quality. Professionalizing VET personnel in various aspects of developing and quality assuring assessments is still high on the political agenda. On the other hand, VET institutions are getting used to taking a more pro-active role in quality assurance via good self-evaluations, as becomes clear from recent initiatives in the "Process Architecture Assessment" described in the conclusion. The current more holistic standards and profile sketches of the IoE add to this positive development, awarding the required freedom to VET institutions to indeed take these initiatives.

### ***12.3.5 Tension 5: Balancing Summative and Formative Assessment***

The transition towards competencies, core tasks and working processes as the end goals of VET and the changed perspectives on learning towards more (social) constructivist views (De Bruijn & Leeman, 2011; Elshout-Mohr et al., 2002; Nijhof, 2008) led to new ways of assessing students in VET. Additionally, the strong

influence of assessment content and methods on students' learning processes became more and more recognised (Segers, 2004). Many authors have emphasised the impact that an assessment programme has on student learning. Assessments define success and students cannot be blamed for optimizing their chances to achieve success (Van der Vleuten, 1996). This tension shows how VET institutions address the challenge to use assessments both summatively, to award diplomas, and formatively, to stimulate student learning. In locating this balance, they are influenced by the IoE that focuses on summative assessment practices for quality assurance purposes, and scientific research that increasingly focuses on formative assessment for its major impact on teaching and learning.

Since the review of Black and William in 1998, the role of assessment in learning and the importance of monitoring students' learning processes have grown enormously. This growth entails a transition from only assessment *of* learning (or summative assessment) in which assessment is done to the students, to also assessment *for* learning (or formative assessment) in which assessment is done for and with students. This growth calls for a more active involvement and responsibility of students in the assessment process. Black and William (1998) already showed the potential of assessment to positively influence students' attitudes towards school and learning, student motivation, higher-order thinking and self-regulation. A review by Sluijsmans, Joosten-ten Brinke and van der Vleuten (2013) noted an international focus on formative assessment practices, but also that many international projects indicated the difficulty of actually realising formative assessment in educational practice (e.g., Shavelson et al., 2008; Smith, 2011). Moreover, in the Netherlands no national support system and policy for formative assessment practices exists and external quality assurance mainly focuses on summative practices. This is a problem that is also signalled in many countries all over the world, especially in countries with many large scale national assessments (Popham, 2008). In the Netherlands, VET institutions were for a long time guided by the IoE that only considered their summative practices and strongly emphasised the unacceptability of not strictly separating formative from summative assessment. This did not stimulate schools to develop high-quality formative assessments or it led to ambiguous practices. Gulikers and colleagues (2009), for example, showed that students, teachers and workplace assessors took both formative and summative assessment data into account in their final judgment, while for IoE purposes they pretended to treat them as completely separate. Similarly, Baartman, Prins and colleagues (2007) showed that VET institutions tended to label some assessments as "formative" while they were used summatively, in order not to be required to submit these assessments for external quality control. Next to these ambiguous practices, an additional issue was that schools treated instruction and learning as separate from assessment, often resulting in a mismatch between the two (Gulikers et al., 2009; Gulikers, Biemans, Wesselink, & van der Wel, 2013; Sluijsmans et al., 2008). This approach obviously is not effective for securing and assessing intended learning outcomes, which is key purpose of educational provisions. Formative and summative assessment should be directed at the same kind of learning (Gulikers & van Benthum, 2013). Formative assessment should be interwoven in daily educational practice and assessment



should be more than a one-shot measure, again stressing the importance of assessment programmes that foster student learning in the long run (Sluijsmans et al., 2008). In the current quality assurance system of the IoE, VET institutions also have to demonstrate their formative practices. Yet, these are not taken into account in the quality judgment as such, but the IoE requires this insight to get an idea about whether or not students are properly prepared for their summative assessments.

In search for possibilities for making assessment a more integral part of instruction, several examples in Dutch VET were developed. Sluijsmans et al. (2008) integrate elements from the holistic Four Component Instructional Design model (4C/ID model; Van Merriënboer, 1997) and the Protocol Portfolio Scoring (PPS), a method for continuous monitoring of assessment results. Learners perform a number of authentic ‘whole’ tasks that are representative of their future professional field (Van Merriënboer, 1997). The important notion is that these tasks are both learning and assessment tasks. They are conducted under changing assessment conditions, with more or less independence and at regular intervals during the educational trajectory. The results are collected in an electronic assessment portfolio build up during the entire trajectory. Using PPS, all results are weighted and used summatively. The validity and reliability are accounted for by assuring a mix of assessment tasks comparable to the approaches advocated in assessment programmes (Baartman, Bastiaens et al., 2007; Van der Vleuten et al., 2010, 2012). The assessment system includes a systematic and predefined construction of assessment tasks covering predefined assessment standards, a sophisticated and predefined weighing system for all tasks, and assessor training. Although complex, this system provides opportunities for integrating assessment and learning tasks, as the assessments provide information for choosing a next suitable learning task for an individual learner. The responsibility of the learner for choosing the next learning task might increase over an educational trajectory, stimulating self-assessment and self-regulation skills. Another example is described by Tillema et al. (2000), who developed the Educational Development and Assessment System (EDAS), with the goal to integrate assessment with instruction. From the outset, it was intended to provide an evaluation of students’ learning results that was to be: (1) individual and student-directed; (2) maintained over extensive periods of learning, that is not course bound; (3) focused on learning progress towards selected and individual competencies; and (4) performance-based. Thus, EDAS focuses on monitoring student learning progress during a prolonged period of time and increasing student responsibility in this process – comparable to the system developed by Sluijsmans et al (Sluijsmans et al., 2008). EDAS used an integrative approach to assessing competence by combining a developmental portfolio with a development centre of work-related simulations, and self-assessment combined with peer feedback to reveal possible discrepancies between a student’s self-perception and other people’s perceptions. These should all provide direct feedback to students and provide cues for further development activities.

Both of these examples more or less resemble the model of assessment programmes described by van der Vleuten and colleagues (Van der Vleuten et al., 2012).



This model, which also builds on the 4C/ID model (Van Merriënboer, 1997), integrates assessment and instruction by viewing learning tasks as formative assessment tasks: the main purpose of these tasks is to provide immediate and rich feedback. The same learning tasks, that were first used formatively, can be used for summative purposes later on. This ensures that summative decisions are based on multiple tasks and rich information about the student. Several measures are put in place to separate formative from summative functions of assessment and these measures become more stringent as the consequences of the decision are more profound (high-stakes assessment). For example, in high-stake decisions, the teacher role and assessor role are strictly separated and multiple assessors are used.

In all, this tension demonstrates how the importance of formative assessments is embraced in Dutch VET, but also that its implementation and (external) validation is lacking behind (Sluijsmans et al., 2013). The struggle is to find effective and efficient ways to combine and balance formative with summative assessments and to both assure their quality and their positive impact on teaching and learning. Various systematic and evidence-based examples have been developed in Dutch VET offering ample opportunities for ongoing developments.

## 12.4 The Status Quo: The State-of-the Art of VET Assessment Practice

The tensions described in this chapter show a range of developments, trends and dilemma's in VET assessment practices in the Netherlands that are also evident in other countries. The most important developments can be summarised as: (1) using new assessment methods, (2) viewing assessment as a process and programme with a mix of approaches and strategies instead of a one-shot measurement, (3) increased importance and involvement of companies or professional practice in the different stages of this assessment process, (4) more responsibility of the VET institutions for developing and quality assuring assessment programmes, and (5) viewing formative and summative assessment as two equally important purposes of assessments.

Inevitably, these changes have had a huge impact on the whole assessment process in VET institutions and the roles of teachers, students and labour market representatives in the Netherlands. Workplace supervisors are more often involved as assessors and students are given a more active role. In particular, the roles and tasks of VET institutions have changed drastically. They became responsible for developing their own view on assessment, programmes or plans for entire curricula, and needed to construct new assessment methods they were not trained to develop and use. Teachers got new tasks and responsibilities (Tigelaar, Dolmans, Wolfhagen, & van der Vleuten, 2004) and specific job descriptions were developed for “assessors”, “assessment constructors” and “quality assurance” (Kenniscentrum EVC, Kenniscentrum, 2011; MBO-raad, 2008). Additionally, a wide range of off-the-job and in-company trainings were developed, both nationally and governmentally

supported as well as by individual institutions. The issue of improving and quality assuring VET assessments and the crucial role of teacher professional development are still high on the (political) agenda, reflected in the national “Action plan VET Focus on professionalism 2011-2015” (In Dutch: Actieplan MBO Focus op vakmanschap; Ministry of Education, 2011) as well as in the setup of the national service point “VET Examination” (In Dutch: Examinering MBO). Initiatives aim to increase the transparency and standardisation of assessment practices of different VET institutions and to support VET institutions via training, instruments and service documents.

This chapter ends with the status quo in assessment: the “Process Architecture Assessment” developed by the service point VET Examination in collaboration with VET institutions, supporting bodies and the VET-council. In this process architecture, the tensions described in this chapter can be recognised, as well as the responses of the VET institutions to address them and improve assessment in VET. The Process Architecture is a schematic representation of the entire assessment process in VET (see Fig. 12.2). It starts with (1) setting the framework, which means VET institutions have to decide on and describe their view on assessment, develop assessment regulations and construct an assessment plan for the entire curriculum. This is followed by processes (2a) and (2b) that comprise developing or buying in (summative) assessment methods and stimulating students’ learning to adequately prepare them for the summative assessments. Processes (2a) and (2b) together result in a match: the assessment methods are ready for use and the student is well-prepared. This leads to process (3), carrying out the actual assessments leading to a decision about the student’s performance on the core tasks and work processes. Ultimately, in process (4) the examination committee decides about certification and ensures students receive an acknowledged diploma or certificate. To show that the assessment process and the quality assurance of assessments is an ongoing process in which schools should continuously reflect and improve, the four phases are placed in a Plan-Do-Check-Act quality control cycle. Many VET institutions in the Netherlands have started to use this quality control cycle since their increased responsibility in developing and quality assuring their own assessment processes.

The Process Architecture Assessment depicts the state-of-the-art of the assessment system in Dutch VET. It includes all assessment processes, tasks and responsibilities and is a reflection of dealing with assessment innovations and dilemmas since the introduction of the Adult and Vocational Education Act in 1996. It offers VET institutions handles to deal with the tensions described in this chapter. The Process Architecture provides transparency and standardization of the entire assessment process in VET. Although VET institutions have to include all phases of the Process Architecture, it offers some degrees of freedom within the boundaries of standardization and external control. Finally, it shows the institutions’ responsibility for self-evaluating and improving VET assessment programmes, acknowledging both assessment *for* learning (process 2b) and assessment *of* learning (process 2a).

## Process architecture Examination

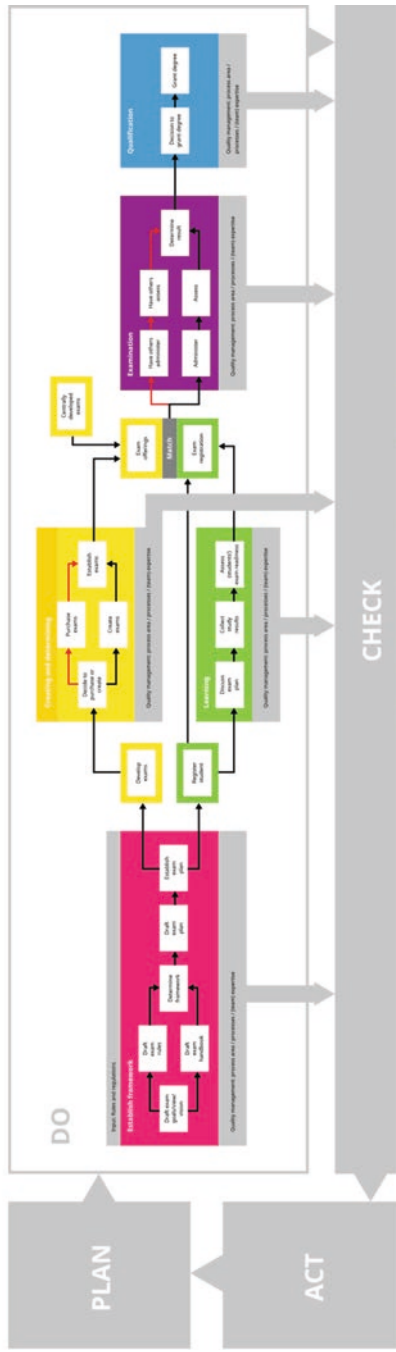


Fig. 12.2 Process architecture assessment

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**Part IV**  
**End Piece**



# Chapter 13

## The Dutch Vocational Education System: Institutional Focus and Transformations

Stephen Billett

### 13.1 The Dutch Vocational Education System: Factors and Purposes

To the outsider, the Dutch vocational education system is striking because of its breadth, complexity and strong institutional emphases. It is difficult to unpick and fathom, not the least because of the long list of acronyms used to describe its current form and the institutions that sit behind these. Not that this system is alone in presenting such difficulties to the outsider. Yet, comprehending this education system and to make comparisons and judgements about it, necessitates understanding something of the complex of factors that shape its particular purposes, forms and structures. It would be wrong, however, to suggest that such an exploration is required only of the Dutch vocational education system. When referring to the origins and form of European vocational education systems, it is necessary to identify and understand the range of factors that have led to their particular forms and diverse characteristics (Hanf, 2002). Having delineated these factors, it is helpful to use them to highlight what is specific and distinct about its institutions, forms and practices, and the relations amongst between them. From such a standpoint, it may be possible to appraise the efficacy of the waves of reforms that have impacted the system in the last 20 years and those likely to arise in the future. Also, an analysis of such factors permits insights into factors that might be common across these systems globally or that make them distinct.

In canvassing and exercising these possibilities, this chapter commences by offering and justifying a framework comprising three sets of factors that are used to delineate the particular institutions, forms and practices of vocational education

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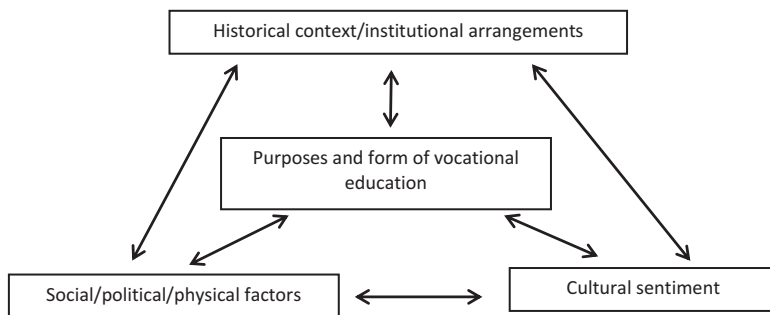
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systems per se. Following the elaboration of this framework, the application of these factors to the Dutch vocational education system is then exercised to illuminate and explore its distinctive qualities and characteristics. Drawing largely on the contributions from this volume, these qualities are discussed in terms of the contemporary provision of the Dutch vocational education system. Overall, it is held that in responding to actual or perceived social and economic crises, the negotiations amongst central agencies (i.e. governments and social partners - unions and organisations of employers) and local institutions and communities have come to shape the particular purposes and forms of the Dutch vocational education system. Social partners have been and continue to be very important in shaping this system. However, it would be naïve to believe there are always close alignments or consonant interests amongst national governmental imperatives and their social partners and those exercised locally, such as the needs of particular companies. These misalignments lead to a dynamic system that is subject to on-going explicit negotiations and engagements with and even resistance to the range of interests and concerns expressed at both national and regional levels. Whilst these are analogous to what occurs in other countries they play out in country-specific ways. This case is made across the following sections.

### **13.2 A Framework for Elaborating Vocational Education Systems**

Rather than merely comparing one vocational education system with another, it is helpful to have a means to understand each of these systems on their own bases and premises. Such a means is important not only for the purposes of informed and balanced comparisons, but also to ensure that an understanding of these systems is not premised upon ill-conceived and erroneous bases. For instance, in the English-speaking world, the word “school” has a particular connotation associated with what is usually referred to as primary school and secondary or high school for children. In English-speaking countries, however, the educational institutions that support young people’s entry into work life and specific occupations tend not to use the word “school” (with some exceptions); for instance, vocational education colleges, senior colleges, community colleges, or vocational education institutions. Hence, when an English speaking audience see the words school, scholen or hogescholen they often erroneously view these as being those institutions in which children complete their compulsory education within which vocational education programs may be embedded. Yet, these words connote quite different institutions in a non-English-speaking context, such as Germany, the Netherlands, Austria, Sweden, Switzerland and, of course, the Nordic countries. Therefore, not only is it necessary to set out the historical development and societal factors that shape these national systems, but also to clarify the meaning of key concepts and words so they can be properly understood and appraised. Such an approach seems more informed than seeking to compare and appraise without such understandings.



**Fig. 13.1** Factors shaping the purposes and form of vocational education

It follows that when seeking to understand a particular vocational education system or make it accessible to audiences from other countries, let alone compare it with other systems, it is helpful to offer a framework to assist the presentation of that system. The following set of factors were identified through an earlier consideration of the purposes, traditions and forms of vocational education (Billett, 2011) as a means to describe and delineate these systems. As depicted in Fig. 13.1, these sets of factors are threefold: (i) historical/institutional arrangements, (ii) social/political/physical factors, and (iii) cultural sentiments. While each of these sets of factors could be divided and elaborated further, they offer bases to inform the (iv) purposes and form of vocational education. Figure 13.1 depicts these factors diagrammatically, illustrating their interconnectedness. This framework is used to inform the account of the Dutch vocational education system as advanced here.

In the following sections, the premises for each set of these factors are outlined.

### 13.3 Historical Context/Institutional Arrangements

Vocational education systems are often associated with responses to particular crises that have arisen out of historical events and circumstances that have shaped their national institutional forms. Hanf (2002) states that many of the European vocational education systems had their genesis in changes to the social and economic systems that led to the formation of these nation states, which, in most instances, coincided with industrialisation. Certainly, the destruction and displacement of existing kinds of work and workplaces brought about by industrialisation led to the need for vocational education systems in many countries (Greinert, 2002). This was partially because the existing model of skill development founded in small and family-based workplaces as regulated by guilds before the 1800s and had been largely displaced, but also because this form of skill development was not well aligned to developing the kinds of skills required for industrialised work (Greinert, 2005) and new occupations arising from industrialisation. So, the need to develop the new kinds of skills and occupations required by industrialisation often prompted

this development because there were no traditions or practices in the community to otherwise secure that learning. The vocational education systems that emerged, however, were not only purposed to develop the new kinds of skills and occupations required by newly industrialising countries. They had other goals to achieve, most of which were institutional. Many were associated with supporting the formation of modern nation states (Gonon, 2009b). For instance, there was a concern for securing the population's affiliation with the newly formed nation state, and overcoming an allegiance to the "estate". That is, just as trade workers owed their allegiance to guilds, many workers in the transition to nation states owed their allegiance to the aristocrats upon whose land they lived (Stratmann, cited in (Heikkinen, 1994). As a consequence, one goal for education systems established by newly formed nation states is to assist in shifting affiliations and allegiances to the state, and away from the estate. There were also concerns that socialist movements or disorderly behaviour might undermine or disrupt these nascent and fragile nation states (Heikkinen, 1994; Troger, 2002). Concerns about having large numbers of unemployed and disengaged young people also drove reforms focused on educational provisions that could generate employable outcomes among this cohort (Gonon, 2009b). Of course, these trends played out in distinct ways across nation states. The Netherlands did not have a central state until the nineteenth century save for the short Batavia republic (1795–1806) which had quite radical ideas about universal education. Dutch industrialisation was very late and the first education system developed to meet the needs of a class society. Vocational education developed initially from private initiative before being taken over by the state, albeit in a fragmented but distinct way.

These kinds of concerns and outcomes were not restricted to Europe. The debates and subsequent efforts in United States to form a vocational education system were partially out of concerns about how to meet the employability needs of hundreds of thousands of young service men who would be returning from the First World War, yet who may have lacked skills that would lead to employment in civilian life (Gonon, 2009a). Similarly, in Australia, the efforts for a national vocational education system arose, firstly, from the need to develop the skills required to prepare war material in the 1940s, and then shortly thereafter in response to concerns about providing employable skills to service men and women returning from the Second World War (Dymock & Billett, 2010). So, national imperatives associated with engaging young people in educational programs that would provide them with employable skills led to the formation of vocational education systems in these countries, rather than just the development of occupational skilfulness alone. The emphasis across all of these countries was on occupational preparation of occupational skills in young people, rather than on workers' continuing education, which, if it occurred at all, was often conducted by interest groups and specific institutions, not directly through government funded programs.

The diverse approaches taken and institutional arrangements established across nation states to similar sets of imperatives were premised on particular national factors. In Germany, the provision of technical schools and the interest of workplaces led to the apprenticeship system that comprised the provision and alignment of experiences across workplaces and educational institutions (Deissinger, 1994).

Yet, this approach was not progressed in the United States, because of concerns that such institutional arrangements were not possible (Gonon, 2009a). It was held that American workplaces lacked the kinds of capacities to assist and effectively support and sustain apprenticeships as a model of initially acquiring occupational capacities. Particular institutional circumstances lead to markedly different approaches to vocational education across nation states. De-centred and non-regulated approaches leading to diverse and ad hoc arrangements in Britain and the United States, while legislated arrangements led to consistent and regulated approaches in Germany (Deissinger, 1994). Different institutional arrangements across Britain, Germany and France lead to very distinct forms and provisions of vocational education (Greinert, 2002). More so, as (Gonon, 2004) proposes, the particular cantonal system in Switzerland has led to another variations in vocational education within that country. In another example, whereas in the majority of countries most apprentices are school leavers aged between 16 and 18 years, because of particular institutional arrangements, on average Canadian apprentices are 26 years old on commencing their apprenticeships. This is because of the key role taken by organised labour (i.e. unions) in a country that lacks a national portfolio for education, and where vocational education is administered by the provinces. The simple point here is that a set of historical and institutional factors shape the form and kinds of provisions of vocational education in each nation state.

### 13.4 Social/Political/Physical Factors

Social, political and physical factors represented may seem eclectic, and although separately these provide useful insights, collectively they offer a means of capturing how particular national factors or circumstances come to shape provisions of vocational education. Different societies often have distinctive ways of valuing occupations, varied emphases on educational systems (e.g. vocational versus general education), particular political/governmental systems (e.g. centralised versus decentralised), cultural and linguistic differences within states (e.g. linguistic areas within Switzerland) and diverse geographical factors (e.g. location and dispersal of population). Some of these factors can have a significant impact upon how vocational education is conceived and enacted. For instance, the Federal arrangements in the USA played a particular and dramatic role in the outcomes of one of the most notable debates about vocational education. As is widely known, Dewey, the philosopher, was pitted against Sneddon, who in making a case for what should constitute the US approach to vocational education in and around 1917 was backed by powerful industrial interests. Dewey argued for vocational education largely premised upon general education, but with an occupational emphasis. Sneddon, on the other hand, argued for a form of vocational education that was highly occupation-specific. It is often stated that Sneddon, backed by those powerful interests, won the debate. Subsequently, he was appointed to a senior government position to implement that specific form of vocational education. Yet, federal governmental intentions in the

US are not always realised in or by the states who have responsibilities for and fund educational provisions (Labaree, 2011). Indeed, although Sneddon argued strongly for the establishment of a vocational education system separate from schooling systems in the US states, they all declined. These states argued that they already had a system and it was too costly and also unnecessary to establish a separate vocational education system. Instead, they elected to integrate vocational education within the existing education system, leading to the kind of community education system that, essentially, is closer to the system proposed by Dewey. The point here is that the social-political system in a federated nation state meant that the decision-making of central agencies has limited impact.

Perhaps in another political system, such as Australia's federal system, the will of the centre could have been imposed through tied-funding grants and national legislation. In particular, a historical legal precedent in Australia that gives the federal government the right to have the first take on income and other taxes means that they are able to exercise direct influence on vocational education for the most part by controlling its funding. In contrast, Canada has no national department of education, and all decisions are inevitably taken at the provincial level meaning that policy and institutions are shaped by provincial priorities and concerns. The Netherlands, with its traditions of freedom of education is characterised differently again with its higher level of greater negotiations and contestations, both of which would lead to very different kinds of outcomes. The situation in China where over 30 million students are engaged in vocational education, with 13,500 institutions and more than 2 million teachers requires certain kinds of governance arrangements and approaches to engagement than might be required for countries with smaller populations and different means of societal engagement, such as The Netherlands with its 18 million people.

Also, there is a need to accommodate physical factors such as geography. For instance, in Australia modes of apprenticeship differ across the states because of geographical factors. In the very geographically large states of Western Australia and Queensland, where apprentices might work thousands of kilometres from the nearest college, attendance in these states is based upon block release (i.e. release to college for a block of time). That is, they work 5 days a week in their workplaces and then, at one point in the year, attend the vocational college for a block period of time. In the other, geographically smaller states, most apprentices will live within a few hours travel from a college. Hence, in those states apprentices attend on a day-release basis, quite commonly 1 day a week over a number of weeks per year. In the Netherlands, with relatively short distances between town and cities, extensive public transport system and dense populations, these factors might be of less consideration. It would be wrong, however, to ignore or underestimate concerns that arise even in these circumstances, such as the time taken by students and teachers to travel and on often crowded public transport. Thus, social, political and geographical factors that arise in situationally and nationally-specific ways in particular nation states influence the provision of vocational education.

### 13.5 Cultural Sentiment

Cultural sentiments have a powerful influence on the structure, purposes and forms of vocational education (Billett, 2014). Of note here is the Germanic *beruf* concept; a cultural sentiment that values and supports skill development and does so as a shared community responsibility (Deissinger, 2000). Such a sentiment underpins factors such as the obligation on enterprises to provide high quality training, apprentices accepting lower levels of pay whilst training, parents knowing they will need to support their children through apprenticeships because of those low pay levels and established relationships between workplaces and local vocational education institutions ensuring that appropriate experiences are provided so that apprentices might learn effectively. *Beruf* concept is culturally powerful and, in part, obviates the need for government regulation and inspection because it is accepted as being worthwhile and important and is also a socially-shared responsibility. This cultural sentiment is not restricted to Germany; it also plays out in the German-speaking parts of Switzerland, and also in parts of The Netherlands (Onstenk, 2017a). Another example of an influential cultural sentiment is French republicanism. Arising from the great social revolution is a sensitivity about work being potentially injurious or usurious for French people (Greinert, 2002). One consequence of this sentiment is a cultural preference for a separation between education and work. This is one reason why apprenticeships are not as common a form of occupational preparation as they are in neighbouring countries such as Germany and Switzerland. Indeed, efforts to introduce apprenticeship models of initial occupational preparation are often met with resistance, and a lack of commitment which often forestalls their implementation and hastens their demise (Veillard, 2015). Also, in France, achievement within the academic institution is privileged and used as a basis for employment and promotion (Remery & Merele, 2014). Hence, whereas the provision of workplace experiences is a central feature of many tertiary education programs in some countries, this is much less so the case in France.

A different kind of cultural sentiment plays a direct role in Swedish education, and across Scandinavia. The concept of *Logom* (i.e. everybody is equal and you should not view yourselves as being above others) means that there is an emphasis on ensuring that students pass program requirements, and do not necessarily need to be graded as to the level of achievement. This approach would be unacceptable in countries where societal sentiments emphasise competition, merit and student ranking. Think of how the sentiment of American liberalism plays out educationally. This sentiment suggests that there is a provision of education in which everybody can participate without cost, yet places an obligation upon individuals to make the most of this opportunity. Ultimately it is up to each individual to ensure that they maximise the opportunity provided (Labaree, 2011). Noteworthy here, and elaborated below, is the Dutch concept of “freedom of education” that has a range of consequences for the kinds of education and the ability of centralised authorities to control the provision. This sentiment is one arising from the “school-war” fought on religious grounds at the turn of the twentieth century. Three freedoms of education



resulted from the settlement of this conflict: (i) choice of school; (ii) of foundation (i.e., to founding of the school -specific views of life); and (iii) organisation (i.e., contents of learning, methods and personnel) (Frommberger & Reinisch, 2002) that are fundamental to shaping the relations amongst the efforts of central government, social partners and the communities in which vocational education is enacted. Important here is that the cultural sentiment in the Netherlands (and before 1800, Holland, was a bundle of provinces) that had no state regulation or national curriculum. Only with the brief French occupation did national regulations emerged. The school war (to have freedom of education) can also be understood from a sentiment to organise education at the local and not the national level. In this way the formation of and formulations of ‘State’ is at odds with how Dutch regulations develop perhaps captured in the term ‘polderen’, meaning everything has to be negotiated.

## 13.6 Purposes and Form of Vocational Education

As indicated above, these three sets of factors lead to particular purposes and forms of vocational education within nation states, albeit in the Dutch situation the power of central government has been more constrained by provincial factors than in other states. Vocational educational provision, like those of other educational sectors, should be and usually is purposive and intentional, and is ideally the product of informed, considered and broad engagement (Billett, 2011). That is, the actual provisions ought to be directed and guided by particular and considered intentions. However, as outlined above, often the broad purposes for establishing, developing further and transforming educational systems are responses to perceived or real crises as exercised by central governments in their desire to achieve particular outcomes. By degree, the goals for vocational education can be the product of community debate, combined with the interests of social partners. Yet, when urgency demands, as increasingly seems to be the case, the express expectations of government drive imperatives, changes and reforms that may or may not capture the interests of those who employ, represent workers, work and study. It follows, therefore, that the sets of factors laid out above are generative of particular types of purposes for vocational education, which in turn shapes the provisions.

### 13.6.1 Purposes

The particular sets of factors laid out above, aim to direct the purposes or stated intents of vocational education systems in specific ways. For instance, historically, although still the case in some countries and some educational systems, there was a chosen emphasis on vocational education being about preparation for working life (Dewey, 1916), but not necessarily associated with a specific occupation. Yet, in contemporary times, increasingly, even in countries favouring a more general

approach to post-compulsory education, there is a growing focus on vocational education being directed towards the initial development of occupational capacities, as is the case in The Netherlands. The demands of government for young people to have an employable qualification before they can qualify for welfare benefit the applied higher education provisions are evidence of this, albeit in a ways that is country-specific. In some instances, this extends to expectations associated with making students and graduates “job ready” (Organisation for Economic Co-operation and Development, 2010). That is, not just being prepared for a specific occupation, but that preparation extending to being specifically competent to carry out a specific job. Of course, even these kinds of goals differ depending upon whether the education provision is located in specialist vocational education institutions or in schools that have general education as their main concern, as is the case in The Netherlands. There have also been elements of vocational education programs that focused on societal engagement (effective and engaged citizens), in some ways responding to or trying to compensate for students who were not wholly successful in compulsory education. In these situations, vocational education includes developing capacities associated with numeracy, literacy, communication and citizenship. Hence, even the most occupationally-specific programs, such as apprenticeships, have also had purposes associated with these kinds of educational goals, as was previously the case in Australian apprenticeship programs. As an example of how these purposes can change; employer complaints that these subjects were not directly related to the skills needed to be effective in their workplaces, led to these general educational goals being removed from Australian apprenticeship programs.

However, not every vocational educational purpose is directed towards initial occupational preparation for young people. Often aligned with adult education, but more recently associated with goals associated with lifelong learning, the educational purposes of vocational education can also be associated with further education of either a general or more specific nature (e.g. social /economical betterment). A focus on cultural and social betterment was the original focus for the “further” education provision within the Australian Technical and Further Education (TAFE) system. Further education was a significant element of that provision up until global emphases on and reforms associated with lifelong education (Organisation of Economic and Cultural Development (OECD), 1996) meant that adult education had to be increasingly shaped toward economic purposes (Edwards, 2002). Currently, in a number of countries (e.g. Australia, Singapore, Canada, Finland, Sweden, Denmark) part of that broad agenda for education being responsive to the changing requirements of work and workplaces emerges more prominently as a factor of continuing education and development or professional development, as it is sometimes described (Organisation for Economic Co-operation and Development, 2006). That is, a provision of education not necessarily focused upon initial occupational development, but on sustaining and developing further student occupational capacities (i.e. employability). In these ways, a range of different kinds of purposes directs the provision of vocational education.

The sets of factors laid out above also influence the forms of vocational education and its governance.

### ***13.6.2 Forms of Vocational Education***

The form and shape of national vocational education systems and their means of governance are shaped by the factors set out above. One broad distinction that can be made between these is whether the governance of an educational system is ordered in a “top-down” way or whether “bottom up” decision-making and discretion is encouraged and exercised and to what degree. While it is accepted that the vast majority of vocational educational provisions are organised through the state (Skilbeck, 1984), the question is the degree to which educators can and are authorised to respond locally to the perceived needs of students and industry, or whether these are ordered by central agencies, and which differs across systems and time. A growing feature of contemporary governmental intervention in vocational education in many countries is a strengthening of top-down decision-making that often marginalises local practitioners, such as teachers, and diminishes their discretion. The engaged and exercise of industry control is sometimes justified in terms of these decisions being too important to leave up to teachers (Billett, 2004). This seems more prevalent in some systems than others. With governmental constraints being placed upon available resources, a trend of increased administration, intervention and management of what is taught, how it is taught and how student learning is assessed, and how educational programs are evaluated is now apparent (Vähäsantanen, Hökkä, Eteläpelto, Rasku-Puttonen, & Littleton, 2008).

Yet, even within these trends, some systems appear to afford teachers greater discretion than others. For instance, it is often claimed that a key factor in the German vocational education system is the local discretion afforded to vocational educators, not only in terms of content, but in the partnerships formed with local enterprises to secure effective and tailored apprenticeship arrangements (Deissinger, 1994; Deissinger & Hellwig, 2005). However, these arrangements are far from fixed. Indeed, when governments try to enact more control over what teachers do in vocational education it can be the source of frustration, resistance (Baverstock, 1996; Vähäsantanen et al., 2008; Warvik, 2013) and tension resulting in constraints on educational provisions and experiences. Hence, when decision-making is primarily centralised and top-down, the form of vocational education is shaped by processes that value uniformity and adherence to centrally-decided means and measures. National syllabuses become more detailed (i.e. teacher-proofing), tightened certification and uniform approaches to credentials become dominant. Such means come to shape the form of vocational education. Equally, in systems where educators are afforded discretion and local negotiations with social partners are permitted, vocational education exists in different forms.

A key indicator, therefore, for the character of national vocational education systems is the degree of discretion afforded teachers and the scope of their roles. This extends to the degree to which there is a requirement to be professionally prepared for the role of vocational educator. Again, in countries where there is a strong societal commitment to the development of skills, those who teach and also support learners must meet stringent requirements and high expectations (Deissinger, 1994).

Conversely, seemingly, in those countries that seek firmly to centrally administer the provision of vocational education (Brennan Kemmis & Green, 2013), the requirements for a professional preparation are being removed, and instead short courses for instructional skills are mandated. Over time, this will lead to a professionally limited teaching workforce that runs counter to the very rhetoric that often accompanies the need for reforming vocational education systems: the requirement to be responsive and flexible and having an established provision of vocational education able to attract and retain young people in the occupations for which they are being prepared. A key characteristic of current and emerging top-down models of the governance of vocational education is to minimise the contributions of vocational educators in informing what should be taught, how it should be taught, what should be assessed and the means by which should be assessed. All of this is particularly curious because, in many vocational education systems, such as Germany, Switzerland and Australia, the teachers' occupational expertise has been the basis of their recruitment and employment as educators (Billett, 2013).

Another characteristic of vocational education systems is the nature and quality of their relations with what is referred to as "industry". Is that relationship best built on mutual respect and trust and a product of collaboration in providing appropriate educational experiences, or premised upon industry determining what needs to be taught and the education system attempting to realise those requirements through highly-mandated prescriptive standards, guidelines, instructions and documentation? Again, the degree by which these relations are played out is likely to differ across circumstance, time and occupational focus (Billett, 2013). For instance, some time ago in Australia, when the economy was booming, employers had little expectation of having a direct influence upon the content of courses and how and what was taught. Instead, they suggested that this was educators' business (White, 1985). Yet, under different economic circumstances, the same employers demanded tight control over the content, teaching and who and what was taught. Also, those courses most tightly aligned to occupational requirements, particular when they are highly regulated licensed (e.g. electrical and plumbing), or are likely to have far more prescriptive content and assessment against prescribed standards than when the occupation is less regulated (i.e. contemporary music).

Another element of the educational provision is the positioning of students, whether students are primarily in that role as elements of those programs, or employees who also attend educational institutions, such as those who are apprenticed in many countries. Added to this is the degree by which the student voices are considered and engaged with in the planning, enactment and evaluation of vocational education provisions. It is indeed rare to come across a situation in which a systematic process of understanding student needs and capturing them in a way which can inform decision-making within a curriculum, the provisions of experiences and discussions about assessment. The orthodoxy that comprises curriculum development coming from schooling is not to engage with the voice of students; this tradition seems less plausible in the education of adults. Indeed, when asked, vocational education students indicate that they have clear goals (Billett, 1996), and make judgements about the effectiveness of the education provision in meeting those goals and

also the quality of experiences (i.e. graduate outcomes)(Billett, 1998). Indeed, data from graduates strongly indicates what they value from their education, what has led them to find employment, and overwhelmingly endorsed the contributions of their teachers (National Centre for Vocational Education Research, 1997).

These sets of factors set out above and their consequences for the purposes and forms of vocational education are advanced here to describe and substantiate a framework through which to elaborate and illuminate the Dutch vocational education system. It is held that such a framing allows that system to be understood through an elaboration of the factors and imperatives that shape it, and also to permit an informed comparison with other vocational education systems. It follows, therefore, that in the next section, these same measures are applied to the Dutch vocational education system.

### 13.7 Elaborating on the Dutch Vocational Education System

The origins of, changes to and transformations of national vocational education systems often arise through social and economic crises, and the Dutch vocational education system seems to be no exception. Its formation and initial form arose from changes brought about by industrialisation and engagement by the nation state albeit under the auspices of a brief French occupation and the short Batavia Republic (Frommberger & Reinisch, 2002). Over time, however, the system that emerged was shaped by sentiments that were distinct from both France and neighbouring Germany. Initially advanced by private (i.e. civic) organisations and some employer organisations, subsequent crises or perceptions of crises have brought about changes to the system as constituted through negotiations interactions between local communities and central government, but in ways distinct from a federal system such as Germany. There have also been concerns expressed by social partners such as employers and employees, and also local communities, as many contributors to this edited volume acknowledge. Subsequently, there have been concerns about the quality of teaching, student outcomes and the extent and kind of governance arrangements being enacted in the management of vocational education institutions (van der Klink & Streumer, 2017). Hence, as in other countries, what (van der Meer, van den Toren, & Lie, 2017) refer to as institutional fields have had key roles. Indeed, it is proposed that in The Netherlands, the particular quality of engagements between central government and the vocational education system, whilst negotiated, emphasises sets of expectations from national government and social partners. Yet, as proposed by a range of current accounts, the outcomes of these negotiations were not always matched by the adequacy of the: (i) adopted curriculum arrangements (Meijers, Lengelle, Winters, & Kuijpers, 2017; Wesselink & Zitter, 2017), (ii) teacherly practices enacted (De Bruijn & Bakker, 2017; van de Venne, Honigh, & van Genugten, 2017; van der Klink & Streumer, 2017) and (iii) educational models of governance (Westerhuis & van der Meer, 2017) required to achieve the kinds of outcomes demanded of the system (van der Meer et al., 2017). In responding to

actual or perceived social and economic crises, the negotiations amongst central government, national social partners and local institutions have come to shape the particular purposes and forms of the Dutch vocational education system, as stated in many of the aforementioned contributions.

In this section, therefore, and drawing largely on the other contributions to this book, the aim is to capture something of the dynamics arising from these crises and to illustrate how they have influenced the provision of vocational education and training in The Netherlands that extends to its original formation and the factors shaping its changing form and purposes. As set out above, these sets of factors are: (i) historical/institutional arrangements, (ii) social/political/physical factors, and (iii) cultural sentiments. While each of these sets of factors could be further divided and elaborated, they seem to offer a basis that can inform the (iv) purposes and form of Dutch vocational education.

### 13.8 Historical Context/Institutional Arrangements

As was the case in many other nation states (Greinert, 2002), the development of a national vocational education system in the Netherlands was the product of changes in social and economic structures and those associated with industrialisation, in which the Netherlands was a late starter (Onstenk, 2017b). Indeed, the historical and circumstantial factors played out in particular ways leading to a distinct vocational education system. (Frommberger & Reinisch, 2002) note that while events in the Netherlands and Germany shared some similarities in terms of the removal of ancient guilds and increased government intervention, there were obvious differences in the formation of their respective vocational education systems. The brief French occupation of Holland and subsequent Batavian Republic led to a decline of the ancient guilds and a deregulation of trades. Elsewhere, it has been noted that, whereas in Germany the guilds were replaced by bureaucratic arrangements, in Republican France they were dispensed with entirely, being seen as obnoxious elements of the Ancient Regime (Troger, 2002) that could potentially serve as disruptive intermediaries between the individual and the state (Frommberger & Reinisch, 2002). As well, given sentiments in Republican France about the exploitative nature of employment, trades were also deregulated in contrast to what happened in other countries, and there was also a strong disaffection for aligning education with work (Remery & Merele, 2014; Veillard, 2015). Thus the sentiments aroused during the brief French occupation at that time did much to shape the initial approach to vocational education in The Netherlands, which was later re-shaped by strong liberal traditions. The shaping process included developing a stronger preference of initial occupational preparation occurring within educational institutions (i.e. *Ambachtscholen*), rather than through apprenticeships (Frommberger & Reinisch, 2002; Onstenk, 2017b). *Ambachtscholen* were initially founded as a private sector response to concerns about the need for basic work skills and work discipline, and as a correction of the perceived failings of general education in preparing

individuals adequately for workplace roles. Later, they were taken over by the state. Yet, much later, after the end of the Second World War and under state control (1968), the educational focus within these institutions came to centre on general

In the recent epoch, as in many other countries, Dutch vocational education has been the subject of intense governmental attention and cycles of reform that often disrupt established programs, regardless of their perceived value. This led to the imposition of a new set of purposes and provisions, which themselves became subject of critique and rebuttal (De Bruijn & Bakker, 2017). Subsequent reforms responded to some criticisms of these measures, but pressed on with others. In particular, those associated with forms of control and seeking direct alignments between vocational education provisions and the labour market appear to have progressed, but in ways that are often seen as being remote from the realities of those provisions and those markets at the local level. What is perhaps distinct about the Dutch system is that there are historically founded institutional arrangements and societal sentiments associated with Freedom of Education that pressed for negotiation and reconciliation between the imperatives and actions of central government, and the circumstances where these programs were being enacted. Indeed, this movement was distinctly different to what occurred in France, where such freedom was from feudalism, including religiosity. In the Netherlands, it was a reconciliation of conflicts between Catholic and Protestants in the early years of the twentieth Century, and a struggle for all groups to have the freedom to organise their own education, and in ways that were nation specific.

In the Dutch context, the differentiation between either being “top down” or “bottom up” reforms is complicated. For instance, negotiations between central agencies and local providers led to the modification of and even retreat from centrally established policies. These include changing language associated with vocational education from including terms such as competence through to occupations have been occurred (Wesselink & Zitter, 2017). This change progressed through negotiation processes of a different kind to those occurring in other nation states, particularly those in which central governments operate more forcefully and even dictate policy centrally.

One facet of this institutional divide was the establishment of now long-standing cooperative traditions between vocational education institutions and industry across the twentieth century. This tradition was one upon which regional approaches were developed, followed by the construction of Regional Education Centres (ROCs) of in the 1990s, as a direct result of the mergers of local schools (Westerhuis & van der Meer, 2017), albeit within a national qualification framework. Local arrangements and negotiations (i.e. personal relationships between schools and local businesses) had sustained partnerships which have been central to the provision of vocational education. Moreover, unlike the case in other countries, a number of the vocational education schools in the Netherlands were founded by private bodies (i.e. industry groups) and partially funded by government, so distinct traditions played out here.



However, the introduction of national qualification structures and influence on curriculum (Wesselink & Zitter, 2017; Westerhuis & van der Meer, 2017), and assessment practices (Baartman & Gulikers, 2017), came about in response to concerns about enhancing the alignments between vocational education provisions and outcomes, and the needs of the labour market, similar to concerns that likewise prompted change in other countries. (De Bruijn & Bakker, 2017) provide a detailed account of how these arrangements have unfolded over the last three decades in The Netherlands. They note how evolving historical events and crises led to changes in how the kinds of knowledge that are the focus of vocational education provisions came to be scrutinised, contested and transformed, yet in ways that were characterised as negotiations amongst the central government, social partners and the local community. These negotiations led to a series of changes in the nature of the purposes of Dutch vocational education and how it was to be enacted, including the introduction of quality assurance systems. These qualification structures were intended to secure greater alignment between education provisions and the requirements of the labour market (Baartman & Gulikers, 2017). This was to be partially realised through proposing key skills on which assessment would focus, in the form of specific qualification profiles (Wesselink & Zitter, 2017). The strongly educational institution-oriented focus of the Dutch vocational education system is set out in the first chapter of this volume. Yet, the complexity of and multi-levels of educational programs made it difficult to be responsive to industry (i.e. local company) needs, such as the drive to ensure that young people attained an occupationally-aligned leaving qualification. Moreover, competition amongst ROCs brought about marketization which was aberrant and counter to concerns about local community engagement which were a primary reason for their establishment (Westerhuis & van der Meer, 2017). Also, the impact of these reforms across the entire vocational education system was differentiated. For instance, although these reforms impacted HBOs (professional bachelor studies), they did so in ways that affected the rest of the vocational education system differently. That was because the HBOs are regulated individually; for instance, they do not offer national qualifications in the way that other elements of the vocational education system do (De Bruijn & Bakker, 2017).

Thus the historical evolution and form of the institutional arrangements central to the Dutch vocational education system are quite distinctive. They have led to governance processes that comprise relations between central government and local institutions, and are influenced at both levels by social partners, in ways that are country-specific. However, in an era in which central governments seek to gain greater control over the utilisation of public resources and assets, this relationship has become the central focus for constructing the purposes and forms of vocational education. The emphasis on providing vocational education based primarily in educational institutions, that also offers pathways across into HBOs and that is expected to provide young people with employment-related outcomes have a direct outcome on the kinds and form of vocational education in The Netherlands.

### 13.9 Social/Political/Physical Factors

As was the case in many other countries, as mentioned, governmental reforms in the 1990s aimed to secure a stronger alignment between the provisions of vocational education and the needs of national labour market in The Netherlands (De Bruijn & Bakker, 2017). One of the key proposals advanced in the 1996 Education and Vocational Schooling Act was for students to have more access to experience in work settings, so they could come to understand the requirements of work and develop the capacities to practice effectively in the workplace (Wesselink & Zitter, 2017). Yet, this did not necessarily sit well with a vocational education system whose provisions are largely based within educational institutions, and where extensive structured entry-level training including workplace experiences, as in apprenticeships, is not a central element of that system.

The creation of ROCs has helped shape recent vocational education provisions (Westerhuis & van der Meer, 2017). The meaning of regions and regionalism in The Netherlands is somewhat distinct. Whereas in other countries regions are often politically-bound entities, in the Netherlands, a geographically small, but densely populated country, regions relate more to a local community, its workplaces and institutions, and how these can be served by vocational education. Hence, rather than decision-making about education falling to a political entity (i.e. land, state, county) much of this is undertaken locally and situationally. Hence, the tensions between national mandates and requests for local flexibility have come to question and potentially stymie the emergence of a vocational education sector, by means of the ROCs, in its own right (Westerhuis & van der Meer, 2017).

Tensions in relations between regional and national decision-making were expected to be addressed through deliberations about VET qualifications, but this did not always happen. For instance, the qualification profiles developed centrally were seen to be too specific and inflexible (Baartman & Gulikers, 2017; Mulder, 2014). This led to their re-negotiation and the implementation of qualification profiles that had a more general educational focus than the earlier highly-specific occupational profiles, which included what were referred to as generic measures of occupational competence. However, these measures were found to be too broad to be applicable, and required a translation process to make them relevant to particular occupations, work settings and, therefore, assessments (Baartman & Gulikers, 2017; Wesselink & Zitter, 2017). This issue has been identified elsewhere when broad statements referring to “industry standards” were found to be impractical because of the vagueness of the term itself and the actual diversity of what constitutes industry standards of work (Nijhof, 2008). This is because industry standards for work differ widely and can be quite inconsistent in their requirements. Therefore, using such a term has been found helpful in terms of permitting judgements, but less helpful in terms of reliability of those judgements (Baartman & Gulikers, 2017).

Another example of these relational tensions was located within the process of attempting to regulate assessment practices: central government established (and then closed) a national centre intended to supervise and audit the quality of

assessments within vocational education. However, this division between central and local organisation of education lead to circumstances in which assessment practices were held to be the responsibility of the regional college, operating within a framework of self-evaluation and audit (Baartman & Gulikers, 2017). Yet, as had been the case with the statements of competency, there were complications and problems associated with performing this role; ultimately, the centre was disestablished because of its apparent inability to effectively manage the quality of assessment processes (Baartman & Gulikers, 2017).

It follows then that in The Netherlands, there a particular set of political, cultural and demographic factors, including the nature and kinds of negotiations between the centre and local interests that play out in particular ways. While framed around a highly institutionalised approach to vocational education, these factors had consequences for the kinds of governance structures and educational processes adopted in the Dutch system.

### 13.10 Cultural Sentiment

There is a long tradition of “school” autonomy in the Netherlands, as noted above, which is supported by societal sentiment encapsulated by the notion of Freedom of Education (Westerhuis & van der Meer, 2017). Much of the dissonance between the centre and the regions arise when there are perceived differences between culturally-derived expectations about the provisions of education the government’s ability or desire to provide resources (Westerhuis & van der Meer, 2017). This can include a drive for reforms that extends to central control over vocational education. In particular, the growth of liberal and neo-liberal policy framings increase tensions with precepts of Freedom of Education, such as the provision of competition policy which stands as being contrary to the goals of those precepts (Westerhuis & van der Meer, 2017).

Yet, whilst this aspect of societal sentiment is strong, (Harms, Hoeve, & den Boer, 2017) note that there is no strong community commitment to a science of education associated with skill development, as is the case in the German concept of the *berufspagodik*. Focus on Craftsmanship (2011) was used to implement a national policy through economic leverage. Hence, the absence of broad community support and broad engagement in and commitment to the development of initial occupational capacities and the fact that much of this provision was enacted in an educational setting, led to a strong focus on instructional practices within educational institutions, as is discussed below.

Likely, the societal sentiment was that which prompted the lengthy process of inquiry and consultations, rare for their kind, that were enacted prior to the establishment of the 1996 Adult and Vocational Education Act. These are what (Westerhuis & van der Meer, 2017) refer to as an example of the institutional tensions that arise between governmental imperatives and a societal sentiment about Freedom of Education exercised at the local level. In other systems, the government would have

been able to force the amalgamation of small institutions whereas in the Dutch context this could only be the result of engagement and deliberations, in contrast to the mandated acts that might occur elsewhere. This enables the societal sentiment of Freedom of Education to be pitted against the aspirations of central government. However, as emphasised by the Dutch laws requiring young people to obtain employment-related educational qualification, such negotiations may not always be the best vehicle to inform and support educational provisions capable of achieving goals of securing greater alignment with the labour market and also preparing students for specific occupations, and for particular workplaces.

## **13.11 Purposes and Form of Vocational Education**

The three sets of factors outlined above are advanced as the complex of factors that underpin the particular sets of purposes and forms of vocational education in The Netherlands. The purposes are derived from the intentions aimed to be realised through the national vocational educational provisions as a result of particular laws and educational requirements. These factors also lead to the specific forms, practices and approaches to vocational education, and over time and through particular circumstances, any changes these may undergo. In the two following sections, these purposes and forms are elaborated by drawing on the contributions to this volume.

### ***13.11.1 Purposes***

Educational provisions should be directed and guided by clear intended purposes, and most of these are derived from key institutional interests such as government, industry and the needs of communities. Some educational purposes are of a general kind, such as the education of young people and preparing them for working life. Then, there are specific forms of education required to prepare people for specific occupations as required by government. These manifest themselves in particular ways in The Netherlands. For instance, young people are required to remain engaged with education until they successfully completed an unemployable qualification or secured employment. Hence, national policies focussed on making young people employable mean that educational structures emphasise mobility for students within domains of the vocational education system; from VMBO (i.e. pre vocational education for lower secondary school students) to MBO (i.e. intermediate vocational qualifications) to HBO (van der Meer et al., 2017). These purposes are a nation-specific response to two related policy goals of supporting citizen employability and promoting economic activity. Indeed, across the Western world in the last 25 years there has been a strong imperative associated with aligning educational provisions with the needs of the labour market. Activities such as the formulation of curriculum standards and also uniform and consistent (i.e. reliable) assessment processes were

all driven by a desire to close the gap between the requirements of the labour market and the vocational education and training system, albeit through top-down approaches (Wesselink & Zitter, 2017). In some ways however, these initiatives have disrupted the seemingly productive relationships that exist between local vocational education institutions, with employers given input into the content and assessment of student performance. Baartman and Gulikers (2017) provide a detailed account of these tensions and how they played out in decision-making and practices associated with assessing student performance. These prescriptions are differentiated across the vocational education system with HBOs being partially exempt as they are not constrained by national qualification systems (De Bruijn & Bakker, 2017).

Even more specifically, as (van der Meer et al., 2017) argue, an imperative such as innovation comes to form a central element of government policy, with educational institutions and programs being directed towards addressing these purposes. The purposes of vocational education, as indicated previously, are often caught in a bind between national prescription and the quest for local relevance and responsiveness (Westerhuis & van der Meer, 2017). For instance, the national policy emphasis on particular industry sectors may well be difficult to implement at the local level. As the Dutch workforce becomes increasingly reliant on contracts and as self-employment becomes more common, there is a growing need for the development of capacities associated with communication and entrepreneurship through vocational education as well as digital competence in what is required for what (Westerhuis & van der Meer, 2017) refer to as the so called twenty-first century skills. These skills also refer to the kind of qualities that students need to develop during their studies to be effective in working life, particularly when they involve engaging with others and in work settings. (Meijers et al., 2017) propose that the students require what they refer to as intrinsic motivation. They hold that because students need to learn to interact with others, make decisions and advance their learning, during the course, but also as rehearsal for what will be required of them in working life, the development of these kinds of qualities becomes an important educational goal. Yet, as (Meijers et al., 2017) report, commonly the form of vocational education is quite monological. That is, the kinds of experiences it provides are not well-aligned with achieving the desired kinds of outcomes.

Dewey (1916) proposed there are two key purposes to vocational education. The first is to identify to what occupation an individual is suited, and, following this, to assist that individual develop the kinds of capacities required for their selected occupation. In recent reforms within the Dutch education system there has been an emphasis on career guidance and providing students with advice about careers and career pathways. However, (Meijers et al., 2017) conclude that this is an “add-on” rather than being central to the educational provision, and is, therefore, not wholly effective. Dewey’s point about the necessity of gaining understandings about what careers individuals are suited to as a precursor to selecting educational programs seems to be ignored here. This is a common complaint made by career advisors across many countries. Not the least of these concerns is that providing information is insufficient; any assumptions made about whether students can and are able to make rational career choices remain questionable without them experiencing those

occupations being enacted (Meijers et al., 2017). Certainly, there are many instances of young people making career choices at the time they are forming their gendered identities which later turn out to be markedly inappropriate.

### 13.11.2 *Forms*

As outlined earlier in this chapter, most forms of vocational education provisions in Netherland are institutionally-based. That is, just as is the case in countries such as Sweden and Denmark, they are largely undertaken under the auspices of and within vocational education institutions. Compared with counterpart approach in Germany and Switzerland, there is a comparatively limited set of arrangements where these provisions extend into workplace settings, particularly those that are structured such as apprenticeships, in which the apprentices are employees. Indeed, the lack of such traditions, led to establishment of arrangements like the Regional Practice Centres in creating work-based learning arrangements such as apprenticeships with ROCs. Whilst there are workplace based components of programs they have not adopted the broad provisions of apprenticeship education that features in neighbouring Germany.

To this day, centres in the construction industry continue to host apprentices, even while employers are reluctant to do so, even after the abatement of the global financial crisis (Onstenk, 2017b). Instead, there is more interest in simulated work-activities or placements – a preference for educational institutional practices (Onstenk, 2017b). Yet, despite the importance of building localised relationships and partnership to provide these experiences, as is the case across the border in Germany, increasingly, the regional provision of vocational education is premised on a market model (i.e. competition) rather than partnerships (Westerhuis & van der Meer, 2017). In some ways, this positions the vocational education system to undertake tasks at the behest of government, rather than responding locally. (Westerhuis & van der Meer, 2017) claim that, rather than building upon this relationship, it was eroded by the demands made by the regional provision of vocational education, through the manoeuvring and imperatives of the various parties. Indeed, emblematic of the negotiations and tensions between the centre and local institutions is that in attempting to be regionally-relevant and responsive, the constraints of national uniformity put these local relations under pressure (van de Venne et al., 2017; Westerhuis & van der Meer, 2017). Ultimately, the lack of co-operation between ROCs and workplaces make effective provisions of workplace learning difficult to establish, enact and sustain (Onstenk, 2017b).

As a consequence of these relations and strong institutional focus the ambit for pedagogical activities is about utilising and trying to augment experiences in educational settings (Harms et al., 2017) to compensate for the lack of workplace experiences. So, whereas the *berufspagogik* is an approach based around the requirements of particular occupations, the approach taken here is very much about pedagogical science focused on the provision of experiences within educational institutions.

In the absence of long-term structured workplace experiences, these approaches have been characterised as being threefold: (i) workplace learning experiences and their integration into the educational program; (ii) creating flexible pathways for students through educational programs; and (iii) promoting self-directedness in students. The point is that all of these strategies are very much educational-institution based. This circumstance, for instance, has led to a range of learning enterprises within these institutions which according to (Harms et al., 2017) range from restaurants to food factories, and from day-care centres to administrative offices. From these circumstances have arisen needs to investigate how to improve and enhance these provisions of vocational education. Research on hybrid learning environments is being led by Dutch researchers (Zitter et al., 2017).

Another aspect of this institutionalised approach is to focus on specified learning outcomes in the form of competency statements and to use these to direct and guide the educational effort (De Bruijn & Bakker, 2017; Wesselink & Zitter, 2017). This, then, is a set of considerations associated with identifying outcomes and then enacting educational experiences to achieve those outcomes. Such an approach places an emphasis on the ability to articulate and capture statements of competence that do justice to the performances they are purporting to represent (De Bruijn & Bakker, 2017). The common complaint is that these types of measures only address observable and measurable aspects of performance rather than those which, whilst difficult to capture, are the most important learning outcomes for demanding tasks such as those comprising paid employment. That is, those that underpin the thinking and acting yet are not observable and cannot be validly captured in one-off assessments. On the other hand, when the statements of competence are too broad, they lose meaning because of their generality (Harms et al., 2017). However, there is a broader commitment to the development of applicable learning outcomes (i.e. tacit, situated and embodied knowledge) and that this is a consistent focus across the entire vocational education system, including HBOs (De Bruijn & Bakker, 2017). Further, (Meijers et al., 2017) proposed that there is a contradiction between the requests for developing twenty-first century skills that includes active engagement and agency on the part of the individual, and the kind of model of vocational education that is prevalent and most favoured by administrative emphases, rather than educational ones. That is, approaches that focus on measurable statements of competence (De Bruijn & Bakker, 2017) and the kind of teaching approaches that are favoured in cost-effective provisions of educational provisions (e.g. large group size) may run counter to achieving these outcomes (Meijers et al., 2017). These authors propose that unless foundations exist that are associated with effective career choice and also the development of capacities allowing students to engage effectively and agentically in work-related activities, that much of that which follows may be ill-placed and inappropriate. They point out, for instance, that the emphasis on students having work experiences, whilst helpful, may overlook the absence of a supportive learning environment in these settings. Instead, it will be up to the students to engage and learn effectively, but in ways which quite distinct from classroom type engagements. Unless they are prepared for these kinds of experiences, they may struggle to make the most of them.



It follows, that these researchers suggest that a key role for teachers is to develop these kinds of capacities in their students and that this may not be best achieved by monological approaches to education. Instead, they emphasise the importance of having two-way interactions (i.e. dialogues) between teachers and students, and enacting educational processes based around those premises. They refer to the importance of having learning environments either in the educational institution or workplace that are: (i) practice-based; (ii) promote dialogic interactions and (iii) foster co-operation and consensus (Meijers et al., 2017). Here, there is a key focus on teachers and teacher roles. These roles may well have to extend beyond the educational institution into the workplace. Because, whilst these researchers refer to the importance of such practices being exercised in workplace, they also raise concerns about whether this can and will be the case. Consequently, it may be necessary for teachers to reach into, or prepare students for experiences in, work settings. Again, these all emphasise the role of the teacher, not only as a designer of experiences but also as requiring understandings about workplace interactions, and also engaging with students in ways which are dialogic rather than didactic.

However, despite all of this interest in and reliance upon the quality of teachers and teaching, the professional development of vocational educators is often overlooked and/or seen as being a low priority for resources (van der Klink & Streumer, 2017). They infer the obvious point that, as in many other countries, whilst the vocational education system exhorts the importance of having effective occupational preparation and, indeed, the mainstay of its efforts are directed towards that goal; it is rarely exercised towards its staff. Yet, given the specific importance placed upon the quality of educational experiences proposed by government and focused at the institutional level, it seems strange that preparation to be a vocational educator is so limited. Indeed, the premise is that if individuals have an undergraduate degree from an applied university in the content area this permits them to be able to effectively teach that content (van der Klink & Streumer, 2017). Generally, it is acknowledged that vocational education has the most diverse range of students of the educational sectors and teachers are required to “teach” those students at a wider range of qualification levels than occurs within compulsory or university education. Variation in the age, educational background and language competence are also widely dispersed within vocational education student cohorts. Moreover, given the changing nature of the requirements for work and specific occupations, those preparing students to participate effectively in those occupations and contemporary working life require opportunities for maintaining the currency of their occupational capacities and also understandings about the kinds of work situations in which their students and graduates will engage. However, systematic and well-directed programs to promote this development appear to be in the minority, despite the requirement to have a developmental plan in place at the institutional level (van der Klink & Streumer, 2017).

Considerable effort is, therefore, being exercised and research undertaken to focus on how to create learning environments that challenge traditional school-related activities and are designed to ease the transition of the students to the workplace by providing them with learning outcomes that will permit them to respond effectively

to what they encounter when they leave college and commence working life (Harms et al., 2017; Meijers et al., 2017; Wesselink & Zitter, 2017).

It seems that this institutionalised approach to vocational education and the scholarship and research associated with it is becoming a key contribution of the Dutch approach to vocational education, and particularly, higher vocational education. For instance, a number of the instructional design approaches and research and evaluation of these attempts to provide hybrid learning experiences within education institutions are focused on the Netherlands and conducted by Dutch researchers. Similarly, with this focus on pedagogic practices, the educational provision comes to rely on the capacities of teachers. There is, for instance, research and discussion about the importance of personal professional theories (PPT) which is given prominence because of the importance of teacher competency in being able to organise these experiences (Harms et al., 2017).

Curiously, many of the issues associated with teachers' capacities, and emphases on their development, are rehearsed in issues associated with the governance of vocational education. That is, whilst emphasis has been placed on a decentralised or regional model of governance of vocational education and training, the expectations and frameworks for governance and their evaluation are set out centrally, and there is considerable tension between what is set out, and what is able to be achieved locally (van de Venne et al., 2017). Merely passing the onus on to school boards and establishing sets of performance measures has repeatedly been found to be ineffective. This because they are variously remote or unable to directly influence the organisation and enactment of the provision of vocational education (van de Venne et al., 2017). Indeed, these authors identify a range of factors associated with the capacity of boards to manage multilayered organisations, the structuring and structure of schools in the VET sector, the schooling environment and also the aptness of approaches of engaging with administrators and educators in a way which adequately captures their work activities and imperatives (van de Venne et al., 2017). In many ways, the same issues faced by central government in dealing with school boards are those which are found within relations between boards and operation units within vocational education institutions.

### **13.12 Appraising the Dutch Vocational Education System**

Overall, it has been argued that in responding to actual or perceived social and economic crises, the Dutch vocational education system in its current form and likely future manifestations will be a product of complex negotiations amongst central government, social partners and local institutions. It will be these negotiations that will come to shape the particular purposes and forms of the Dutch vocational education system. The historical and institutional context will continue to elaborate and transform over time through these negotiations, and also the continuing press of economic and social imperatives from outside of The Netherlands. The responses will be shaped by political, social and physical factors which may not be known or

predictable at this time. Certainly, recent unprecedented patterns of migration to Europe from countries whose economies, cultural practices and kinds of employment are quite different from European countries suggest that the role of vocational education in countries such as The Netherlands will have to respond accordingly. It is most likely that this system will be the one best able and most likely positioned to respond to the needs of these migrants.

As with other initiatives, if this were to be the case, there will be ongoing tensions between the imperatives of central government and also local communities in which migrants come to live in different kinds of numbers and concentrations. It is not, therefore, possible to predict the future purposes and forms of vocational education based merely upon more predictable developments within occupations and working life, such as new technologies and ways of working, nor popular meta-policies such as a focus on innovation. Instead, social, political and physical factors may come to transform both the purposes and forms of vocational education. Not the least here will be the need to assist and guide young and older adults' progression through the matrix of programs and complexity of links and associations amongst the various levels and kinds of vocational education in The Netherlands.

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