

Technical and Vocational Education and Training:  
Issues, Concerns and Prospects 18

Ludger Deitmer  
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Felix Rauner  
Helmut Zelloth *Editors*

# The Architecture of Innovative Apprenticeship

 Springer

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

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## Volume 18

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# The Architecture of Innovative Apprenticeship

 Springer

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# Foreword

## Introduction by the Series Editor

An important worldwide trend over the past two decades has been the massification of secondary and higher education where in many countries an increasing proportion of youth are deciding to complete secondary schooling and go onto undertake higher education studies. As a result, education institutions have expanded their course offerings to cater for a wider range of interests and capabilities than was previously the case, with many secondary schools and postsecondary education programmes increasingly stressing the vocationalisation of education. This trend, along with a major redefinition of the characteristics and requirements of education for the changing world of work, has greatly impacted on the content of technical and vocational education and training (TVET) including the bridging of academic and vocational learning.

When considering the issues and challenges concerning the vocationalisation of education, many policymakers, researchers and practitioners are revisiting the matter of apprenticeships and how best they can be shaped to meet changing labour force and economic needs.

This is an important book about the architecture of modern apprenticeships with regard to appropriate standards for structure, organisation and governance. The book is a key contribution to cross-cultural research about this area. As such, it will be of keen interest to scholars and students working in technical and vocational education and training (TVET) and careers education, and those in comparative and international education. It has also much to offer stakeholders interested in policymaking and improved practice concerning TVET.

The book examines core topics relevant to developing and sustaining a suitable architecture of innovative apprenticeships including successful pathways and transitions from school into apprenticeships, the development and measurement of competence, the role and status of social partnerships and the status of apprenticeships.

The book makes an important contribution to the relatively small body of literature specifically related to apprenticeships in the context of the changing world

of work and provides an up-to-date perspective on the regional and global changes that have transformed the concept of apprenticeship in recent years. It provides vivid case studies of a wide range of countries including Turkey, South Africa, Austria, Germany, China, Australia, Germany, England and Switzerland.

The chapters cover diverse aspects of apprenticeships, starting with an optimistic opening which argues that apprenticeships have experienced a revival in recent years and the opening Memorandum which introduces the 'dual system', whereby many countries are adopting an apprenticeship system based on a change to workplace learning combined with classroom teaching in an educational institute. The evolving of the dual system serves to promote TVET as a means to providing employment opportunities for young people and to facilitate the transition from school to work. This requires coordination between TVET providers and employers to match training with labour market requirements, the overall objective being to open up rewarding careers for people and to improve the competitiveness of companies.

This book provides an interesting and wide-ranging discussion of the often complex issues surrounding the apprenticeship system, and the editors and contributing authors are to be thanked for making such a valuable contribution to this important topic.

Rupert Maclean,  
The Hong Kong Institute of Education.

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# *Memorandum*

## **An Architecture for Modern Apprenticeships: Standards for Structure, Organisation and Governance**

**INAP Commission ‘Architecture Apprenticeship’**

### **Introduction**

Apprenticeship, the oldest type of vocational education, has experienced a revival in recent years (Rauner and Smith 2010). Many new countries are newly adopting apprenticeships based on what is termed the ‘dual system’ of vocational education, so called because it combines workplace learning in an enterprise with classroom teaching in an educational institute. The ‘dual system’ will be explained in detail throughout this chapter, but at this stage in the introduction, its four major objectives are briefly presented below:

1. Better coordination between the vocational education and training (VET) systems and employment/labour market systems
2. Promoting employment opportunities for young people, thus facilitating transition from school to work
3. Improving the competitiveness of companies
4. Opening up rewarding careers for a large segment of the population.

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At its meeting on the occasion of the 4th international conference of the International Network on Innovative Apprenticeship (INAP) in Beijing, China, in May 2011, the INAP Board made the decision to establish an international commission to analyse the conditions of modern apprenticeship training. The mission of the INAP commission was presided by INAP’s founding Chair, Felix Rauner (Germany). Further commission members are Salim Akojee (South Africa), Robert I. Lerman (USA), Erica Smith (Australia), Bonita Watt-Malcolm (Canada), Helmut Zelloth (ETF) and Zhiqun Zhao (China).

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According to international comparative innovation research, one can identify a link between the attainment of these objectives and the establishment of dual training of skilled employees at the intermediate qualification level – skilled workers, master craftspeople etc. However, the successful introduction of dual training systems in new countries is dependent on reaching the quality requirements and standards achieved in those countries with advanced systems of dual VET.

On the basis of the research findings presented and discussed at INAP conferences, the INAP Board presents this memorandum entitled 'An Architecture for Modern Apprenticeships'. As already mentioned just above, the board is of the strong opinion that the successful establishment of dual VET depends on certain prerequisites being fulfilled, and if not, reforms will not meet the expectations of VET policy makers. Already, the inappropriate usage of 'apprenticeship' or 'dual VET' terms is contributing to false expectations and uncertainty among policy makers. The memorandum addresses the following points:

1. Criteria for modern dual vocational education and training systems including the establishment of a solid and reliable dual VET track (see "Criteria for modern dual vocational education" section)
2. Standards for the governance of dual VET systems (see "Governance of dual VET systems" section)
3. Structure and development of occupational curricula (see "Structure and development of occupational curricula" section)

The target audiences of this memorandum are policy makers responsible for the management and organisation of dual vocational education, as well as researchers and practitioners in VET.

The INAP Board stresses that if dual VET systems are to be attractive to learners (apprentices) and enterprises, a strong commitment on the ground is required of vocational colleges, qualified teachers and trainers. It is also essential that the social partners play their role in the coordination of labour market, economic and education policies. The pluralism of institutions and actors involved in the organisation and management of dual VET necessitates a high level of cooperation. This need for coordination is one of the main factors that distinguishes vocational education from general education, with the latter falling within the responsibility of a *single* policy sphere, namely, education policy. The success of VET policies requires the cooperation of different policy makers, the lack of which has often impeded many fine efforts to establish dual VET systems.

One of the main aims of this memorandum is to address obstacles that militate against the successful establishment or expansion of modern dual VET systems. One of these is the fact that the term 'apprenticeship' is associated by many policy makers, human resource managers, parents and students with an outdated concept of vocational education that does not fit the modern digital age. This is in spite of the fact that international VET research shows that the contrary is true with modern dual VET systems demonstrating their relevance in all occupational sectors. Moreover, many countries are implementing the principle of dual vocational education in third-level higher education with great success.

The members of the INAP working group, who represent the know-how of international VET researchers, are familiar with the strengths and weaknesses of apprenticeship in their countries and regions – Europe, Asia, Australia, Africa and the United States. The work of the INAP commission that produced this publication – ‘An Architecture for Modern Apprenticeships’ – looked at case studies in many countries as well as investigated the potential of informal apprenticeship traditions which play an important role, for example, in some African countries. The ILO recognised that an upgrading of informal apprenticeships has potential for innovation in the field of vocational education (Cf. ILO 2012).

The INAP working group feels that new international initiatives can benefit from studying the apprenticeship standards outlined in this memorandum, which are mainly derived from countries with advanced dual VET systems, such as Switzerland, Germany and Australia.

## **Criteria for Modern Dual Vocational Education**

### ***High Quality and Holistic Competence in an Occupational Field***

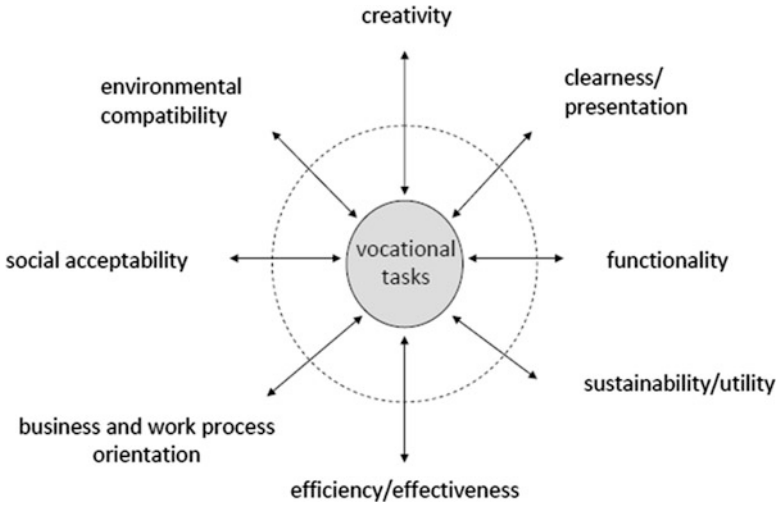
The unique selling point of an apprenticeship (or dual vocational education) is the production of people with a *high quality and holistic competence* in an occupation which is certified through a final assessment of professional knowledge *and* skills.

Vocational education and training initiatives result in the formation of people who can work independently in accordance with the standards defined in their occupational profile and who are recognised as experts in their occupational community of practice.

They possess a fine balance of skills and knowledge learnt through working with and learning from highly qualified staff. Their experience in undertaking real work projects under the supervision of expert practitioners will have equipped them not only with skills and knowledge but also the contextual ‘work process knowledge’ that can only be learnt through participating in live work processes. Indeed this ‘work process knowledge’ determines the curriculum and the pedagogical approach for all apprenticeship training.

### ***Competence to Shape One’s Work: Shaping Competence, Ability to Independently Control and Manage One’s Professional Tasks***

In the modern world of work, the idea of qualifying a workforce for the execution of simple tasks on the basis of detailed instructions and guidelines is no longer tenable. This has been succeeded by the guiding principle of participation by the workforce in work processes and organisational change. Thus, instead of attempting to *adapt* employees and apprentices to existing structures, one must now aim to give them the ability to shape new structures for the world of work to meet



**Fig. 1** Attributes of the holistic (complete) solution of occupational/professional tasks to a high-quality standard

economic, social and environmental demands. This ability is summarised by the term 'shaping competence' which is coined on the pattern of the German word *Gestaltungskompetenz*. The concept of 'shaping competence' is based on the notion that undertaking a work task is always about finding not the 'right' solution but a good one that is adequate for the situation.

The attributes outlined in Fig. 1 represent eight dimensions which skilled workers have to match up to in undertaking a work task. All of these dimensions have to be addressed in a holistic manner in accordance with the situation if the task is to be successfully completed.

### ***Seeing 'Work Context' as a Constitutive Feature of Professional Work***

In defining occupations in accordance with 'work contexts' (paradigmatic work situations), one disconnects professional competence from the superficial processes of technological evolution and an overly abstract analysis of skills and competence. By 'work context', we mean an identifiable area of work that comprises many complex but integrated work tasks. The retreat to abstract theoretical knowledge and the accumulation of many different qualification modules work are a barrier to the development of an integrated professional action competence or a shaping competence. For similar reasons, it is impossible to describe professional skills in terms of context-free 'key qualifications'.

The European project, which focused on replacing a variety of occupations in the automotive sector by developing one profile of an 'all-round car mechatronic'

occupation, is an example of a modern comprehensive occupational group that enables its members to understand ‘the car as a whole’ and to carry out diagnostic and repair jobs using computer-based tools as an aid. Work processes supported by computers, electronic media and networks require professionally trained people who have a sound grasp of how networked systems work. The development of modern occupations is about producing people who can master work contexts. Therefore, task- and performance-oriented occupations such as ‘lathe operator’ or ‘milling worker’ must be regarded as outdated.

### ***The Concept of ‘Core Occupations’ Reduces the Horizontal and Vertical Division of Labour***

The division of work tasks resulting in the disintegration of work projects which is a characteristic of the *functional orientation* in work organisation is reflected in the tradition of routine-based (Taylorist) occupational structures. However, the introduction of *business process-oriented* organisational structures in recent times requires specialised occupations created under the conditions of industrialisation to be superseded by *core occupations*. In the last decades, countries with a well-developed tradition of apprenticeship introduced broader occupational profiles (core occupations) and managed to reduce the number of training occupations considerably (e.g. Switzerland to about 220 occupations today and Germany from 900 in 1945 to 350 today). The *principle of specialisation* was replaced with the *principle of exemplarity*. For instance, business training may take place just as well in a tourism company, a department store or a transport company. The areas in which electronic technicians can be trained are no less diverse. When trainees with their various company experiences meet in a vocational school, a process of generalisation of work process knowledge is initiated. This is the basis for the flexibility of markets regarding skilled labour and the mobility of workers. A high degree of specialisation, on the other hand, would restrict this. The introduction of flat organisational structures in today’s enterprises leads to a reversal of the vertical division of labour and opens up opportunities to relocate responsibilities to the level of the productive work processes of the company which are manned by skilled workers.

### ***Creating Sustainable Occupational Profiles***

Public awareness of occupations, as well as the usefulness of occupational profiles for career guidance in preparation for VET and the relevance of occupational identity for apprentices and qualified employees, is all dependent on the stability of occupations. Short-lived occupational profiles or the frequent redefinition of occupations and titles reduce their attractiveness. Given that technological and economic change necessitate the development of new occupations as well as

the extinction of old ones, the development of stable occupational profiles is a challenge for VET researchers and those involved in policy making and planning. The definition of occupational profiles in terms of *work contexts* is crucial for the life cycle of occupations. Accordingly, one can distinguish the following characteristics of occupations according to a decreasing 'work context' orientation:

- Timeless and long-lived occupations (e.g. physician, pilot and a large number of craft trades, service and manufacturing occupations)
- Technology-based occupations (e.g. electronic technician for process engineering, CNC mechanic)
- Narrow operational occupations (e.g. lathe operator)

*Technology-based* and operational occupations lack the essential features of modern professional work processes and contexts. The occupation of 'typesetter' is a good example of an operational occupation that is linked to the superficial aspect of a specific printing technique. However, if the professional activity of a typesetter had been defined from the very start with reference to the work context of *text design* and not narrowed to the operations of hot-metal typesetting, the history of this occupation might well have taken a different course. Under the current conditions of desktop publishing, this would have led to an enhancement of the occupation rather than its disappearance.

### ***Open Dynamic Occupational Profiles***

Although the concept of an open dynamic occupational profile is related to a specific work context, it allows for movement across the whole range of different but related areas of application. It is open to evolution in relation to work organisation and technology, taking into account the new resulting competences required. However, this should not mean any lessening of professional standards or neglect of a professional education.

Graduates of an open occupational profile training process maintain the sense of having a professional identity even when they work in areas not directly related to their training. They are able to bring a sense of professionalism with them as they move into new territories, in particular display a confidence to shape their environment through using the 'shaping competence'. Creating open dynamic occupational profiles means that profiles are flexible and broad enough to stand the test of time. Also, public debate will be stimulated about the need to limit the number of training occupations to about 200–300 internationally recognised non-academic occupations.

Stability in occupational profiles is necessary for career guidance and the development of professional identity. It also addresses the damage caused by the continuous reinvention of job titles in enterprises with a restricted task-oriented work organisation. International and national classification systems developed for labour market statistics are not suited to the development of vocational education

policies. Focusing on narrow highly specialised job profiles or ‘employment occupations’ is not adequate as a basis for the development of vocational education policies, nor is a modular qualification and certification system, found in many national and international qualifications frameworks.<sup>1</sup>

Open occupational profiles are a response to the dialectical relationship between internationalisation and localisation. Overall, the core contents and the titles of the occupations should be internationalised, meaning that occupations have to be open to localisation, modernisation and application in new areas. Open dynamic occupational profiles also lead to the mobility of employees and the flexibility of labour markets.

### ***Promoting Occupational Identity***

There is a strong connection between the development of occupational competence and the development of professional identity. One cannot be effective without the other and each aspect is constitutive of the other. Research on ‘professional identity’ and ‘work commitment’ shows that existing occupations are quite different when it comes to the promotion of identity. Occupations with a low potential for the development of identity are neither attractive for school leavers nor do they form a basis for ‘work commitment’. Accordingly, occupations with a low potential for identity formation are not worth pursuing. However, recent international research that has established methods for identifying factors that promote identity and work commitment can help us here (Cf. Cohen 2007).

The *occupational titles* contribute to the attractiveness of occupations. They are often decisive for the choices of school leavers. Occupational titles should be largely self-explaining and be formulated under the aspect of stability over time.

Occupational identity is a prerequisite for work commitment and the associated sense of work responsibility. Occupational or professional identity is the basis of a professional ethic, which is based on intrinsic motivation. The best way to promote a professional work ethic is to give apprentices the opportunity to shape the overall context and business processes of a company and to understand how they contribute to the success of the company. Fragmented occupational structures lead to unhealthy demarcations between different departments in an enterprise (Kern and Sabel 1994). To address this in recent times, many human resource managers attempted to promote ‘organisational commitment’ based on fostering an emotional bond between employees and their company. Due to the flexibility of labour markets and the increased frequency of changing jobs, organisational commitment has become considerably less relevant (Cf. Cohen 2007). Therefore, one can conclude that today’s flexible labour markets do not lead to an erosion

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<sup>1</sup>See the ILO Working Paper on the pedagogical quality of national qualifications frameworks by Michael Young (2005) and Grollmann et al. (2006).

of 'occupational identity' but to the increased importance of *vocational* education and *occupational* commitment. The retention of one's occupational identity when switching to another employer has contributed to an increase in the importance of the subjective aspect of modern occupations.

### ***Desirable Time Scale for Learning to Be Competent in an Occupation***

The average training period for learning an occupation ranges from 3 to 4 years. A sufficient period of time is important, because immersion in an occupational culture and the process of vocational socialisation are important factors in the development of occupational competence. Integration into a 'community of practice' is associated not just with the acquisition of related qualifications and competences but also the development of vocational identity. This is much more than the appropriation of knowledge and skills or qualifications. For this reason, it is argued that the process of professional development is incompatible with a modularisation approach to curriculum development, which results in the disintegration of professional competence development into separate self-contained abstract components. The integrated *novice-expert paradigm* is the basis for a philosophy of vocational education and training that supports occupational identity formation.

### ***Need for Continuing Professional Development***

Technological and economic evolutions as well as constant corporate organisational development necessitate continuing professional education. (However, it needs to be emphasised that this has to be built on a solid initial vocational education and training.)

The potential of the 'learning enterprise' concept, according to which learning takes place while going through work processes, in maintaining and updating one's professional competence is often underestimated. Traditionally, continuing professional development takes place in the form of seminars or courses offered by training providers external to the enterprise. These training providers compete with colleges and universities in the open market. However, continuous change in the contents of work, for example, the automatic upgrading of computer-controlled work systems, takes place as part of the work process change. This change, which indeed is often initiated by the employees, takes place at such a speed – every day – that continuing training by external providers is not able to keep up. External training thus becomes virtually impossible. Learning *for* updating work processes through external courses almost inevitably lags behind the work processes. Therefore, learning for new work processes, especially in the

operation of computer-aided work systems, has to become a *work and learning* process. Improving the tutorial quality of the computer software is therefore a crucial task for research and development in vocational pedagogy.

Modern dual vocational education involves continuous learning building on the basis of initial training. This is best accomplished if work processes are organised as learning processes as well. Whenever professional activities become routine and non-challenging, a dequalification process begins. Further, the effectiveness of any external continuing training depends on the degree to which learning is incorporated in the work process.

### ***Cooperation Between Learning Venues***

Cooperation between learning venues, which is a core principle of dual vocational education, is based on the insight that each occupation has to be learned in live work processes after all. This principle is implemented in three versions:

- One-phase (integrated) duality or apprenticeship, that is, a scheme where classroom teaching and learning on the job alternate at short intervals so that an immediate systematic reflection of the work experience is possible
- Alternating duality, where relatively long phases of full-time school-based vocational education are followed by similar phases of on-the-job learning in the company (e.g. internships)
- Informal duality, which is characterised by an unregulated practical familiarisation with the profession on the job

The kind of duality of school and industry that is preferable is when the school-based learning phases and learning on the job phases alternate at short intervals. A duality entailing just *one* long phase each for the school and the workplace is not recommended. The company as a learning venue cannot be replaced successfully by other types of ‘practical’ training outside the company. To allow numerous opportunities for ‘reflection on work experience’ (*reflected work experience*), a substantial amount of time for *company-based and systematic work experience* is required. This should comprise at least 50% of the entire training period. This should be based on a training plan covering the two learning venues. The amount of time for school-based training should be between 25 and 50% of the training period, depending on the occupation.

To ensure an adequate range and depth of work-process training in a company, it is often necessary for two or more companies to cooperate. Thus, the concept of *training partnerships* between companies with complementary or overlapping business sectors comes into play. In addition, extra courses may be required in training centres when the relevant competences cannot be learnt in the training school nor in the company. Extra assistance may also be required when the capacity for training apprentices in a modern core occupation is limited due to a reduced vertical range of manufacturing processes in a company.

## ***The Legal Status of Apprentices***

Within their company, apprentices have the status of prospective skilled workers. Accordingly, they are not students who undergo an internship but employees who are subject to special regulations in the form of a training contract concluded between the apprentice (and, if applicable, his or her legal representative) and the company. The VET authorities supervise the legality of the contracts which regulate (a) the training in the company, (b) the timeframe for workplace learning and classroom teaching, (c) the salary or training allowance and (d) the structure of the training process in line with the regulated occupational profiles and curricula.

The salary of apprentices is based on the input-output ratio of their practical work (learning in productive work processes) and the time spent in training.

## ***Cost-Benefit of In-Company Apprenticeship Training***

Research on the costs and benefits of apprenticeship training shows that a 3-to-4-year training programme can be organised in such a way as to cover an apprentice's costs when the apprentice training allowance is about one third of a skilled worker's wage. This applies when apprentices are predominantly young school leavers as distinct from adult learners. In the latter case, financial incentives from the state would be necessary. Having made this reservation, one can say that *the tendency is that the benefit of training is increasing with the training quality*. It is upon this condition that in-company dual training can be self-financing.

## ***Occupational Domains and Vocational Disciplines***

In advanced dual VET systems, the proportion of apprentices in the employment system can vary between 4 and 10%. An average rate of 5% is considered appropriate. Where dual vocational education is an entry route to higher education, the training rate increases above this figure, which is the case, for instance, in Switzerland.

With regard to international structures for the organisation of vocational education, 9–14 occupational areas have emerged. It is not possible to create a system of occupational areas or domains according to one single criterion, and indeed, all occupational areas are pragmatic compromises.

The structure presented by UNESCO-UNEVOC (2005) in the Hangzhou declaration has 12 occupational areas with the corresponding vocational disciplines for teacher training (Table 1). The open description of these occupational areas reflects the idea that an international structure has to be open to localisation.

**Table 1** 12 Vocational disciplines (UNESCO-UNEVOC (2005): Hangzhou Declaration)

Vocational discipline	Topics	Vocational discipline	Topics
Business and administration	<ul style="list-style-type: none"> <li>– Production and distribution of goods</li> <li>– Services</li> <li>– Marketing, administration, finances, insurance</li> <li>– Transportation, logistics, tourism</li> <li>– ...</li> </ul>	Education and culture	<ul style="list-style-type: none"> <li>– Child and youth care</li> <li>– Nursing education</li> <li>– Adult education</li> <li>– Special needs target groups</li> <li>– Music and dance</li> <li>– ...</li> </ul>
Production and manufacturing	<ul style="list-style-type: none"> <li>– Manufacturing</li> <li>– Mechanical engineering design</li> <li>– Supply engineering/environmental engineering</li> <li>– Automotive engineering</li> <li>– ...</li> </ul>	Leisure, travel and tourism	<ul style="list-style-type: none"> <li>– Travel</li> <li>– Sports</li> <li>– Tourist services</li> <li>– Catering and hospitality</li> <li>– ...</li> </ul>
Civil engineering	<ul style="list-style-type: none"> <li>– Construction</li> <li>– Wood</li> <li>– Surface and coating technology</li> <li>– ...</li> </ul>	Agriculture, food and nutrition	<ul style="list-style-type: none"> <li>– Agriculture</li> <li>– Food production</li> <li>– Domestic economy</li> <li>– ...</li> </ul>
Electrical and electronic engineering and information and communication technology	<ul style="list-style-type: none"> <li>– Production systems</li> <li>– Building equipment</li> <li>– Information and communication technology</li> <li>– Media technology</li> <li>– ...</li> </ul>	Media and information	<ul style="list-style-type: none"> <li>– Printing</li> <li>– Electronic-advertising</li> <li>– Electronic-customer-service</li> <li>– Sales promotion</li> <li>– ...</li> </ul>
Process engineering and energy	<ul style="list-style-type: none"> <li>– Applied sciences</li> <li>– Energy conversion</li> <li>– ...</li> </ul>	Textile and design	<ul style="list-style-type: none"> <li>– Clothing production</li> <li>– Fashion</li> <li>– Interior design</li> <li>– Art and craft</li> <li>– ...</li> </ul>
Health care and social care	<ul style="list-style-type: none"> <li>– Health care</li> <li>– Clinical care</li> <li>– Personal hygiene</li> <li>– Nursing</li> <li>– ...</li> </ul>	Mining and natural resources	<ul style="list-style-type: none"> <li>– Mining</li> <li>– Oil and natural gas</li> <li>– ...</li> </ul>

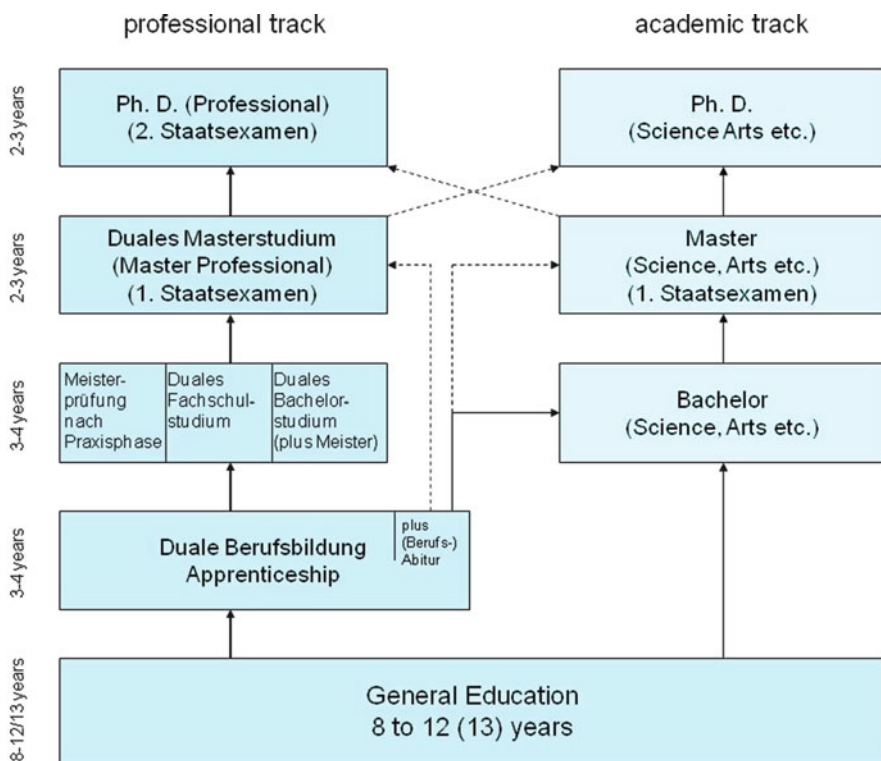


Fig. 2 Architecture of parallel tracks with a dual vocational track

### ***Integration of Vocational Education into a Higher Education Structure: Parallel Tracks***

The attractiveness of dual vocational education for young people and policy makers is compromised by the fact that transition to higher (university) education is limited or does not exist at all. Higher education as *academic* education is presented worldwide in a variety of classification systems and qualification frameworks, which assign vocational programmes and qualifications to the lower levels. The recognition of vocational qualifications for entry to the higher education stream is problematic especially regarding transition to discipline-specific academic degree programmes.

However, the transition from apprenticeship dual VET to tertiary education can be facilitated by a dual track system with four successive qualification levels (see Fig. 2).

Level 1: Upper secondary level

Dual initial VET (3–4 years) with the option to acquire a VET-based university entrance qualification (according to the Swiss model)

### Level 2: Tertiary education

- (a) 2–3-year dual VET college programmes following a completed dual IVET programme and relevant professional experience
- (b) Continuing vocational education and training leading to the qualification of master craftsperson
- (c) Dual degree programmes at universities of applied sciences following a completed IVET programme
- (d) Dual Bachelor programmes (3 years)
  - Bachelor + master craftsperson
  - Bachelor + dual IVET
  - Dual vocational bachelor programmes (bachelor professional)

### Level 3: Dual Master programmes

The establishment of dual Master programmes for graduates of level 2 programmes aims at the qualification of senior managers. The basis for the qualification process is the study of contextual knowledge. The latter is essential for the solution of complex and interdisciplinary tasks and problems.

### Level 4: Graduate schools

At the level of education of future researchers (graduate schools), the dual track is continued by doctoral programmes that are concerned with the study of contextual knowledge. The analysis and shaping of the world of work taking into account the interplay of technology, work and education and different industrial cultures require a high level of study regarding the use of professional and contextual knowledge. The traditional academic doctorate, on the other hand, differs from the professional doctorate presented here in that it investigates a very specific topic in great depth. The orientation of basic academic research in a specific discipline has the advantage of generating new knowledge in a vast array of highly specialised areas. At the same time, there is the disadvantage that the contextual knowledge, which is crucial for professional behaviour and responsibility towards the (social) environment, is not taken into consideration.

## **Governance of Dual VET Systems**

Dual vocational education and training systems require plural governance structures which include the government departments of education, economics and employment and labour as well as business associations and educational organisations. To ensure coordinated plural governance, the conditions outlined below have to be met.

## ***Consistent Legal Framework***

### **A Single Vocational Education and Training Act**

A consistent legal framework is present when vocational education, except tertiary vocational education, is regulated by one single act. A reduced type of single regulation is at hand when several legal acts in the same area supplement each other and constitute a single framework that is based on a single legislative power (e.g. national education laws). A consistent framework is absent when the rules that govern vocational education belong to different legal domains (e.g. educational law, commercial law) and different areas of policy making.

For practical reasons, vocational education and training is allocated to one policy area, which leads to the neglect of other policy fields (education, economic, labour market and social policy). It is necessary to achieve a balance between the various objectives already at the level of the legal framework.

### **Concentration of Legislative Competences**

Concentration of legislative competences means that the enactment of laws is within the responsibility of only one level of government. There is no such concentration when the rules governing VET are included in laws that are enacted by different jurisdictions (national level, regional level etc.). On the other hand, there are examples of complementing legislation according to which the national government is responsible for the overall guidelines while the implementation is the business of the regional level. This would be consistent with the principle of subsidiarity.

### **Integrated Procedure for the Development of VET Curricula**

This means that the regulation of occupational profiles is coordinated in a single and unified process. This is the case when the gradual specification of profiles down to the level of concrete curricula and training regulations takes place in successive steps of decentralised and increasingly concrete specification. The procedure is fragmented, on the other hand, when there is a vertical (federal level, regional level, training institutions) and horizontal (e.g. separate responsibilities for curricula and examinations) diversification of activities.

### **Binding Regulations on the Cooperation of Learning Venues**

The quality of vocational education strongly depends on a reliable framework for the cooperation of vocational schools, training enterprises and, where appropriate, training centres. If a given vocational training act applies to all learning venues, it is possible to enact mandatory regulations concerning the cooperation among them,

in which case the quality of the regulations has to be assessed. If, on the other hand, the learning venues enterprise and school are subject to different legal spheres, the quality of cooperation is usually compromised.

## ***Cooperation of Actors***

### **Legal Regulation of Responsibilities**

It is necessary for the law to define the responsibilities of the actors adequately. What is crucial is that their competences and interests are adequately represented in the system of coordinated plural governance. This applies to the government departments, the organisations representing the business community as well as those representing the local VET institutions. This principle includes mandatory rules for the cooperation of actors in the shape of coordinated VET governance.

### **Involvement of Social Partners, VET Schools and Researchers in a VET Dialogue**

A coordinated plural governance of dual VET guarantees that the actors and stakeholders can participate in the VET dialogue at the national, regional and local levels according to their competences and interests. This applies especially to experts from the social partners, the VET schools and VET research.

The pluralism of policy objectives is represented by the involvement of different actors and institutions. The realisation of a good balance is a prerequisite for a coordinated plural governance of dual VET.

### **Coordination of the VET Dialogue**

The quality of the VET dialogue depends on the presence of a moderating and coordinating institution that has the competence to fulfil this coordinating role for the entire system of vocational education.<sup>2</sup>

### **Regulatory Procedures Require an Early Coordination of the Actors Involved**

Here, the question is how the initiative rights of the actors, the early utilisation of experience gained in the practice of VET and a possible piloting function of

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<sup>2</sup>An example of good practice is the Federal Office for Vocational Education and Technology (BBT) in Switzerland.

qualification research should be regulated in the procedure of curriculum development. A limitation of the right of initiative for single actors should be avoided. Occupational research, diversified according to occupational fields and integrated into VET and labour market research, serves as the basis for drafting occupational profiles and training regulations. The process is supported by experts of the social partners.

Occupational profiles, training regulations and training plans are an outcome of empirically identified qualification requirements as well as normative guidelines that are derived from the objectives of vocational education. In addition, there is the need to find a compromise between the demand of single companies for 'matching' qualifications, the interest of the economic sector in broader occupational profiles and the interest of the individual in a career. These heterogeneous interests and the underpinning political orientations are mirrored in the curriculum development procedures. It is the role of the national and local VET dialogue to find a balance between the policy areas and to identify the associated options.

### **Institutionalised Cooperation of Learning Venues**

The cooperation of learning venues takes place in practice and on the spot. This requires adequate forms of the cooperation between schools and companies, teachers and trainers, for example, by means of occupation boards. In these bodies, the teachers and trainers of a given occupation, occupational area or vocational discipline are cooperating on the basis of relevant (legal) norms. Their mission consists above all in the implementation of new occupational profiles and curricula, the coordinated instruction of the apprentices on the basis of a joint (self-)evaluation that accompanies the training process, bilateral training projects as well as the organisation of examinations.

### ***Allocation of Strategic and Operative Functions***

#### **Legal Regulations Concerning the Collaboration of Strategic and Operative Functions**

In the ideal case, the national level is in control of the strategic functions and the lawmaking capacity for the overall framework. Operative functions are fulfilled at the regional and local levels. Research and development, however, can be situated at any level. It is a sign of bad practice when operative functions, which concern, for instance, the concrete implementation of vocational learning processes, are fulfilled by actors at the national level. Symptoms are lengthy and detailed curricula and centralised guidelines for the design of practical examinations. Another aspect is the limitation of the options of local actors, who are reduced to a role of acting only upon instructions.

### **The Tasks and Responsibilities Are Distributed According to the Principle of Subsidiarity**

The strategic management of vocational education by one actor also must strictly observe the principle of subsidiarity. This is the only way to exploit the potentials for innovation that are inherent in the practice of vocational education.

### **The Development of Occupational Profiles and (Framework) Curricula Takes Place at the National Level While the Responsibility for Setting Up Syllabuses and Training Plans Is with the Local Actors**

This means that the concrete implementation of curricula is left to the actors at the local level. If the output orientation is emphasised too much, there is the danger that occupational profiles and quality standards erode. Therefore, strong input factors are required, for example, occupational profiles that are transformed into lean training plans open for localisation and the definition of examination standards that are open for local implementation. Guidelines for the organisation of training processes, an effective vocational guidance as well as tools for evaluating the training quality and the cost-benefit ratio are essential for the balance of input- and output-oriented management.

### **Relative Autonomy in the Implementation of Curricula**

The strong point of training enterprises is their potential for learning in qualifying work processes. The work tasks and processes that are influenced by the heterogeneity of business areas necessitate a local compromise between the contents of company-based training and the general requirements of VET, which are formulated in the training regulations. This includes the integration of new areas of application and the ensuing qualification requirements.

## ***Innovation Strategies***

### **Legal Basis**

Innovation in all parts of society is based on the interplay of politics, practice and research. Any deficit in one of the three factors is likely to weaken the innovation potential of the others. This applies to the potential of vocational education, too. VET research is underdeveloped in many countries. To establish VET research means as well to set it up as a non-university research branch at the national level,

for example, by a national institute or network of institutes, and to connect it with VET planning and VET policy. The introduction of master programmes for the qualification of VET teachers as well as the establishment of graduate schools is an essential requirement of VET research.

### **Qualification and Curriculum Research and Development**

The development of occupational profiles and the corresponding curricula reaches a high level of quality when it is organised as a process of innovation. The internationalisation of economic development suggests an involvement of relevant international organisations and international VET research in the process of curriculum development. Qualification and curriculum research includes the identification of occupations that are established internationally and meet the standards of modern occupations (see "Criteria for modern dual vocational education" section). This applies also to the methods of curriculum development.

### **Improvement of the Cooperation of Learning Venues as a Topic of Innovation Programmes**

Empirical analyses on the cooperation of learning venues show that the organisation of integrated types of dual VET is a great challenge for the actors involved. The potentials of cooperation are often left unused. Therefore, this is a field of VET research that is crucial for quality assurance in dual VET.

The potential of the cooperation of learning venues is not fully exploited when the cooperation is limited to the side by side implementation of teaching and training. What is necessary is a common curriculum that recognises the potentials of the different learning venues. The areas of professional activity and learning have to be formulated in a way that is open for development and application. The concrete implementation is a task for the local VET dialogue.

### **Training Partnership**

The specialisation of enterprises, especially in the context of supply chains, is associated with a limitation of business areas. A consequence is that many enterprises with instructive work processes are excluded from vocational education and training. The cooperation of enterprises with complementing business areas would make it possible to offer high-quality training for an occupation in its entire breadth and depth. This type of training partnership requires a particular VET management that could be external or integrated into the partnership. Experience shows that the apprentices can also take part in the organisation of the partnership, thereby acquiring additional social competences. The training contracts with the

single enterprises are not affected by the partnership. Training partnerships are a qualitative and quantitative extension of the training potential and increase the profitability of training. In many cases, they render the establishment of external training centres unnecessary.

### **Measuring and Evaluating Professional Competence (Development)**

International VET research contributes to the identification of the scientific foundations for the organisation of VET as the interplay of reflected work experience and acquisition of work process knowledge. It also contributes to transforming these foundations into international standards through VET planning and practice. The characteristic features of vocational education become increasingly visible in this process.

The instruments for the measurement and evaluation of professional competence that were developed in the context of international comparative competence assessment have extended the opportunities for establishing effective procedures for quality assurance. An international cooperation beyond the existing bilateral projects is desirable.

### **International VET Dialogue**

The international VET dialogue is intensified by the ongoing internationalisation in the field of economic and technological development, and it is supported by the continuous expansion of international cooperation in science and research. The international VET dialogue is emerging at three levels:

1. The level of VET research, represented by organisations like:
  - The Asian Academic Society for Vocational Education and Training
  - VETNET (the European network of VET researchers under the umbrella of the European Educational Research Association)
  - INAP (the International Network on Innovative Apprenticeship)
2. The intermediary VET dialogue, represented by organisations like:
  - ILO (International Labour Office)
  - UNESCO-UNEVOC with more than 200 UNEVOC centres worldwide
  - ETF (European Training Foundation)
  - OECD (Organisation for Economic Co-operation and Development)
3. The political processes at the international level (e.g. at the G20 level or at the level of the European Union) can only contribute to a new quality of the international VET dialogue if they are considered as one of the three ‘pillars’ of organising innovation, the two others being the research community and the practitioners. Here, the need for development is quite urgent.

## Structure and Development of Occupational Curricula<sup>3</sup>

### *The Curriculum*

The content and objectives of a VET programme for a given occupation are outlined in a curriculum that offers guidance to trainees, trainers and other actors involved in the training process. The curriculum documents the competences that constitute the holistic professional competence to be attained on the completion of training.

The occupational curriculum is derived from the *professional work tasks a qualified person is expected to be able to undertake*. The tasks and situations have a paradigmatic quality (Cf. Benner 1984) for the occupation in question and have a potential for *development tasks*. The curriculum for a training occupation is termed an *integrated vocational education and training plan that serves as a basis for the design of vocational learning processes at both learning venues in the dual system – the enterprise and the vocational school*.

This integrated VET plan includes:

### **An Occupational Profile**

The occupational profile consists of a brief description of the range of professional tasks and is open to new areas of competence as well as those to be acquired during the training process.

### **A Description of the Learning Areas, Building upon Each Other (Fig. 3)**

A curriculum based on a developmental logic and aimed at a 'shaping-oriented' vocational education needs to fulfil two criteria:

1. The contents and objectives of training must follow a developmental logic, with the different work and learning features oriented towards the work process. It is a prerequisite that the professional tasks outlined in the curriculum are identified and formulated in such a way that allows a beginner to utilise his or her existing competences and meet expectations in making the transition to an apprenticeship vocational education. The learning areas that build upon prior experience are designed in a way to support development in accordance with the 'novice to expert' paradigm (see Fig. 3).
2. The arrangement of characteristic professional tasks in *learning fields* in accordance with a developmental logic constitutes the curriculum. These provide a

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<sup>3</sup>(Cf. Dittrich 2008)

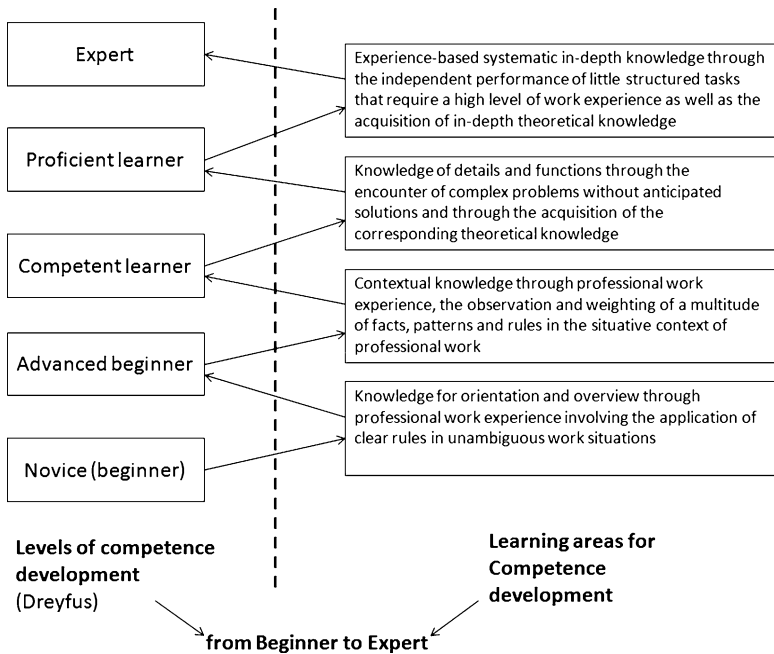


Fig. 3 The four learning areas from novice to expert

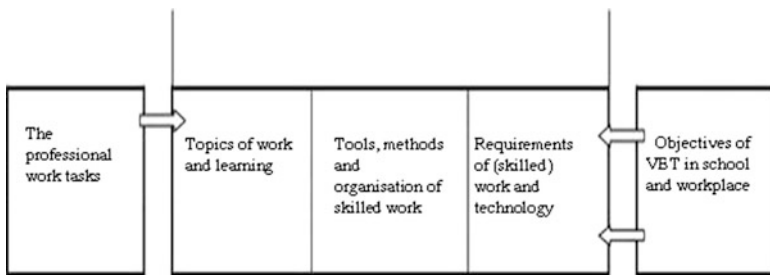


Fig. 4 Structure of a learning field

structure for dual vocational education and training in relation to content and time schedule. Learning fields include the characteristic tasks and the corresponding learning objectives to be addressed in the school and workplace (see Fig. 4).

Thus, the curriculum represents the empirical reality in the world of work as well as the corresponding and transcendent educational objectives. Accordingly, the curriculum also mirrors the tension between qualification and education or between *human resources development* and *personal development*.

## **Content of Work and Learning**

These can be classified according to three categories:

1. Topic of work and vocational learning
2. Tools, methods and organisation of professional work
3. Technical, environmental, economic and social requirements for the organisation and shaping of professional work (see Fig. 4)

## **Educational Objectives Specific to the Learning Venues**

The curriculum for classroom teaching differs from the one for workplace learning only in the learning objectives that are specific for the learning venues. These objectives describe the perspective under which the learners are to deal with the topic at each of the learning venues and how the learning processes at both locations are to complement each other.

## ***Methods of Curriculum Development***

### **Sector Studies (Rauner and Maclean 2008, Chapter 3.1.2)**

The function of sector studies is to support the efforts of the social partners and the public bodies in sector-oriented curriculum development. Empirical studies focus on the employment and enterprise structures in the sector, the relevant business areas as well as the activities and traditions concerning initial and continuing vocational education and training in the sector (SWOT analysis – analysis of strengths, weaknesses, opportunities and threats).

### **Expert Worker Workshops**

Expert worker workshops identify the characteristic work tasks of an occupation as a basis for curriculum development. The professionals participating in the workshops are selected according to three criteria:

1. Expert workers, who by virtue of their professional competence and current professional work context, have the experience to collaborate in the prospective identification of work tasks in a specific occupation.
2. Expert workers do not represent the current practice constituted by the organisational structures in the company but a professional practice that is innovative and future-oriented for a given occupation.
3. The competence of experts and professionals is based predominantly on reflected work experience ('know-how' and 'know-why'). Their work process knowledge enables them to estimate future developments for the occupation or occupational field in question.

## Validation of Professional Work Tasks

Participants in the *external validation* are:

- Researchers with expertise in occupation studies
- Experts from the world of work
- Trainers and teachers

The experience of the external experts is used to amend the list of characteristic professional work tasks, if necessary, and to estimate the potentials for workplace learning and competence development.

## Open Curriculum

Occupational profiles and vocational curricula need to be open to:

- Technological innovation
- Regionalisation
- New business activities
- Organisational development in the training company
- Connectivity of initial vocational education and training with continuing vocational education and training

The concrete training plans are developed collaboratively by the vocational schools, training companies and institutions representing the business community.

## References

- Benner, P. (1984). *From novice to expert: Excellence and power in clinical nursing practice*. Menlo Park: Addison-Wesley.
- Cohen, A. (2007). *Dynamics between occupational and organizational commitment in the context of flexible labour markets: A review of the literature and suggestions for a future research agenda* (ITB-Forschungsbericht 26/2007). Bremen: Institut Technik und Bildung, Universität Bremen.
- Dittrich, J. (Ed.). (2008). *Curriculum design: From professional tasks to education and training plan*. Bremen: Institut Technik und Bildung, Universität Bremen.
- Grollmann, P., Spöttl, G., & Rauner, F. (Eds.). (2006). *Europäisierung Beruflicher Bildung – eine Gestaltungsaufgabe*. Münster: LIT Verlag.
- ILO (International Labour Office, Skills and Employability Department). (2012). *Upgrading informal apprenticeship: A resource guide for Africa*. Geneva: ILO.
- Kern, H., & Sabel, C. (1994). Verblaßte Tugenden. Zur Krise des deutschen Produktionsmodells. In N. Beckenbach & W. van Treeck (Eds.), *Umbrüche gesellschaftlicher Arbeit. Soziale Welt, Sonderband 9* (pp. 605–625). Göttingen, Nomos.
- Rauner, F., & Maclean, R. (Eds.). (2008). *Handbook of technical and vocational education and training research*. Dordrecht: Springer.
- Rauner, F., & Smith, E. (Eds.). (2010). *Rediscovering apprenticeship. Research findings of the International Network of Innovative Apprenticeship (INAP)*. Dordrecht: Springer.

- UNESCO-UNEVOC., Veal, K., Dittrich, J., & Kämäräinen, P. (2005). *UNESCO international meeting on innovations and excellence in TVET teacher/trainer education*. Final report. Bonn: UNESCO-UNEVOC.
- Young, M. (2005). *National qualifications frameworks: Their feasibility for effective implementation in developing countries* (Discussion Paper, Skills and Employability Department. ILO Skills Working Paper No 22). Geneva: ILO.

## Further References

- Connell, M. W., Sheridan, K., & Gardner, H. (2003). On abilities and domains. In R. J. Sternberg & E. L. Grigorenko (Eds.), *The psychology of abilities, competencies and expertise*. Cambridge: Cambridge University Press.
- Fischer, M., & Rauner, F. (Hg.). (2002). *Lernfeld: Arbeitsprozess* (pp. 317–339). Baden-Baden: Nomos.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. New York: Cambridge University Press.
- Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. New York: Basic Books.

**Part I**  
**From School into Apprenticeship:**  
**Pathways for a Successful Transition**

## Chapter 2

# Relationship Between Potential Recruits from VET and HE: Case Studies from Germany, England and Switzerland

Ute Hippach-Schneider and Tanja Weigel

### Introduction

Tendencies towards globalisation and demographic developments both exert an influence on Europe's educational systems and labour markets. The consequence of demographic development within the advanced economies will be to intensify the degree of competition between the various educational sectors for the 'scarce resource' of human capital. As one of the OECD countries set to experience the greatest decrease in children of school age over future generations (Federal Ministry of Education and Research, BMBF, and Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany, KMK, 2006), Germany may find that the level of competition will be particularly fierce.

These developments will also affect the human resource decisions made by companies. Corporate recruitment strategies and behaviours are currently undergoing change, giving rise to the question of whether the future may see companies placing a greater degree of faith in academic courses of study and raising the issues of whether and how they will differentiate the approach they adopt from country to country or from economic sector to economic sector and whether this will bring divergence or convergence in its wake.

Investigations conducted hitherto have not been focussed at a company level or have not involved themselves with alternative decisions between academic or vocational qualifications. They also have not carried out cross-sectoral comparisons or else were conducted some time ago.

Recent years have, however, seen further developments in training pathways both in Germany and the countries forming the object of comparison. In Germany, school-based vocational education and training has grown in significance, and

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a plethora of vocational training opportunities have developed within the tertiary sector (such as at Universities of Cooperative Education and Universities of Applied Sciences). Not least among the developments have been the changes which have taken place in the higher education landscape within the scope of the Bologna Process. In England, endeavours to strengthen the apprenticeship system have received a new boost, one example of this being the introduction of the 'Diploma' for 14- to 19-year-olds, which requires relevant in-company practical experience as well as the possession of knowledge in general educational subjects. One indicator for the strength of the VET systems in Germany and Switzerland is the completion rate of upper secondary education. In the UK, less people complete an upper secondary education than in Germany and Switzerland. Data from Eurostat show that in Germany, 85.3% of the population aged 25–64 completed upper secondary education (2008), 86.8% in Switzerland but 73.4% in the UK. In contrast, you find a higher percentage of educational attainment at ISCED level 5–6 in the UK (37.9%, compared to EU-27 29.9%, CH 35%, DE 22.6% in 2007). (<http://epp.eurostat.ec.europa.eu/portal/page/portal/education/data/database>. Accessed 19 July 2010)

## Research Aims and Questions

The recruitment strategies and behaviours of companies are changing, and in the future, will more companies have greater faith in graduates than holders of VET qualifications or will they differentiate their approach by country or sector? The project takes an international comparison of the recruitment behaviour of companies as a vehicle for focusing on the interface between the educational and employment systems. Individual qualitative case studies form the basis for the international, cross-occupational and cross-sectoral reconstruction of company recruitment strategies and decisions in the context of changing VET pathways Germany, England and Switzerland.

The importance of research contributing a basis for evidence-informed political negotiation processes aimed at being able to demonstrate the quality and level of VET in comparative European terms is readily apparent, within the context of the European 5-level system from 1985, the revision of the ISCED-97 classification and the allocation processes of qualifications against the new European Qualifications Framework.

Research questions:

- From which educational sectors do companies from within the same branch which are comparable in terms of product range and size recruit their skilled workers for comparable activities?
- From the point of view of the companies, are Bachelor qualifications in direct competition to VET qualifications?
- What reasons do companies have in respect of the recruitment of those who have completed vocational training and of higher education graduates?

- What can incentivise companies to prefer those who have completed vocational training?

Only a very small number of studies comparing international company recruitment strategies are in existence, although some investigations touch on aspects of recruitment.

The general perception that companies adapt their work organisation, personnel recruitment strategies and training programmes to fit the respective output from educational systems is one which has long held sway within internationally comparative VET research. In a Franco-German comparative study, Maurice/Sellier/Silvestre (see also Müller and Shavit 1998) take the view that the way in which qualifications are ‘produced’ and subsequently used by companies has led to complex and system-specific relationships between qualifications and activities/jobs. On the other hand, growing similarities between educational systems are being identified, arising from the convergence of social systems (Benavot et al. 1991) or which are viewed as having resulted from a rationalisation in production, international competition and an increasing number of companies operating on a multinational scale (Treiman 1970). Festing (2004) emphasises the culturally independent validity of certain behaviours, existing differences being ascribed to different organisational structures in some cases.

## Methodological Concept

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<i>Objectives</i>	<ul style="list-style-type: none"> <li>• To examine aspects of the effectiveness of VET (as against graduate recruitment) in intermediate skills formation</li> <li>• To identify strengths and weaknesses of VET and Bachelors</li> <li>• To find out how satisfied companies are with their national educational system</li> <li>• To generate ideas about the classification of VET within the EQF</li> </ul>
<i>Companies</i>	19 companies in Germany, England and Switzerland
<i>Sectors</i>	Technology, banking and chemical sector
<i>Methods</i>	<p>Expert interviews with HR managers and managers from the operative departments:</p> <ul style="list-style-type: none"> <li>• 1. Phase (completed): 19 guided interviews with heads of human resources responsible for recruitment decisions</li> <li>• 2. Phase (ongoing): 19 interviews with managers from the operative departments with a standardised grid based on typical activities (work tasks) and competencies of employees with VET and Bachelor qualification</li> </ul>
<i>Project period</i>	2008–2011
<i>Cooperation partners</i>	BIBB, University Zurich

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## Choice of Countries, Sectors and Companies

The German Federal Institute for Vocational Training (BIBB), the research lead, wanted to compare the German VET system with national systems that were similar and different but operated within the European labour market. The wide range of training strategies and control mechanisms in place in England compared to Germany (an approach based on employability versus regulated occupations) made the former a prime candidate for study. England also has a traditionally developed three-level system within HE (Bachelor, Master, Doctorate), which is just being implemented in Germany (the so-called most different system design, as defined by Georg 2005). Switzerland, on the other hand, is considered to be one of the countries in which vocational training plays a primary role within the educational system, meaning that the starting position is comparably similar to that in Germany ('most similar' design). The three sectors for investigation were chosen to represent different branches of industry, and also because major companies in each of the sectors operated in each country, they employed intermediate (technician) level staff in banking, chemicals and ICT/mechatronic fields. Companies selected for the case studies had to have large numbers of employees and had to operate on a worldwide level. All selected companies had to have a branch office in all the three countries and needed to have some experience with applicants from the vocational education system and also with Bachelor candidates.

## Analysis of the Reasons/Motives for Recruitment Decisions

The evaluation of information from both interview phases on the reasons and motives for recruitment decisions will be facilitated by computer-aided content analysis of the transcribed interviews (Merten 1995).

## Findings

The transcribed interviews from the first round of interviews are currently being evaluated and provide the basis for the following findings.

The information/data that will be obtained in the course of this project will not be representative but, rather, personal, company specific and diverse. This, however, is what constitutes its special value. The need for a nuanced examination is particularly evident in connection with the considerable differences in the importance and kinds of Bachelor's degrees. There exists in Germany a wealth of programmes with different structures at different types of educational institutions such as universities, universities of applied sciences (*Fachhochschule*) and colleges of advanced vocational studies (*Berufsakademie*). However, there are also differences

between Germany and Switzerland with regard to the educational background of students at universities of applied sciences. In Switzerland, almost all such students have previously completed formal vocational training. In contrast, in Germany, most students at a university of applied sciences are upper secondary school leavers who have earned the qualification to enter higher education (*Abitur*). In some cases, this has an effect on companies' expectations and the area to which the individual is assigned in the particular company. The very different vocational qualification models in the three countries examined constituted another reason for the choice of the qualitative-methodological approach used in this study.

For this reason, the evaluation of the interviews demands a close and thorough examination of the statements. This in turn also makes it possible to obtain deeper insights into the respective issues. The following presentation of the results of this evaluation reflects this thorough examination and analysis.

### *Aspects of the Survey*

- (a) General assessment of the strengths and weaknesses of applicants with formal vocational qualification/applicants with a Bachelor's degree
- (b) Selection criteria and expectations during recruitment
- (c) Typical career paths
- (d) Satisfaction with the education system
- (e) Use of competence models

#### **(a) General Assessment of the Strengths and Weaknesses of Applicants with Formal Vocational Qualification/Applicants with a Bachelor's Degree**

In general, there is a tendency to class Bachelor's degrees with other academic degrees. For example, in Germany, the university Bachelor's degree, Master's degree and *Diplom* are given equal treatment in connection with, for example, trainee or graduate programmes for persons with one of these types of degrees (see also No. 4 below, [Typical Career Paths](#)). Apparently, the kind of educational institution where the individual earned the particular degree is important here. Consequently, in Germany, holders of a Bachelor's degree are expected to have a clear academic profile and be capable of academic/scientific work. Doubts whether Bachelor's degree programmes meet these requirements were noticeable in some cases. Expectations were formulated: '... a graduate holding a Bachelor's degree is an academically-trained worker who must be familiar with the use of scientific methods for solving problems and must be able to apply and progressively develop these methods in appropriate ways. When an individual is unable to do so, he is not a "Bachelor" and we consequently do not hire him. Since we have other segments from the vocational training system, since we have other segments via the experience and know-how of our employees, we don't need him'. (BDW 127).

Companies reported very positively on their experience with graduates – in other words, holders of a Bachelor's degree – from colleges of advanced vocational studies. Large segments of such degree programmes are conducted in actual companies. The respondent from one company spoke of a 'hybrid' which 'belongs to vocational training' (CDR 169–177; ADB 155–161). Such graduates play a large role in companies' management planning. Companies value the fact that these individuals already have ties to the company and have gathered practical experience there. One company in Germany has steadily expanded its collaboration with colleges of advanced vocational studies. It reported that a number of its divisions had a strong demand for graduates from these schools. The participating company in the telecommunications sector in Germany also has considerable experience with graduates from dual study courses that combine academic studies with in-company training. This even appears to be the priority field for the company's recruitment activities. Due to the involvement of the company in these degree programmes, they do virtually no external recruitment. They train their recruits themselves.

Persons who have earned a formal vocational qualification are considered to have less theoretical training, whereas persons who hold a Bachelor's degree – with the exception of a Bachelor's degree from a college of advanced vocational studies – are thought to lack practical experience (CDR 317). This lack of practical experience is definitely viewed as a disadvantage with regard to, for example, activities that involve direct contact with customers. It was said that persons who had earned a Bachelor's degree needed a breaking-in period of more than 18–24 months until 'they can walk on their own' (ADB 71).

In Switzerland, double qualifications are viewed as the ideal solution in all sectors because they satisfy both criteria for a top-flight education. In other words, they signal an education that is both academic and practice oriented. Accordingly, the respondents in Switzerland strongly differentiated between a Bachelor's degree from a university of applied sciences – nearly all persons who have earned this type of degree have already completed formal vocational training (in contrast to their counterparts in Germany) – and an academic Bachelor's degree from a regular university (DCA 146–159; CSW 174–177; NCK 190–195). Due to the fact that they have practical experience as a result of their double qualification (vocational training plus a Bachelor's degree), graduates from universities of applied sciences are classed with vocationally trained people. In some cases however, they are ranked even higher than individuals who have earned a Bachelor's degree from a regular university (TCL S 138–141; 72–83). The companies surveyed regard them highly and employ them in large numbers. Practical experience is clearly considered a strength. All in all, it was found that all interviewees in England have theoretical knowledge of the possibility of having formal vocational qualifications. This type of qualification, however, plays only a very small role or no role at all for human resources managers. The situation is somewhat different in the case of the surveyed banks and chemical enterprises that have a German headquarters. These respondents had a positive picture of dual vocational training and tried to foster this type of training in England as well.

### **(b) Selection Criteria and Expectations During Recruitment**

In England, the companies had clear-cut notions about their reasons for recruiting university graduates. As to be expected, expressions such as 'transferable academic capability', 'high potential' and 'more generic' are to be heard in this connection. It is of secondary importance whether the applicant's training is a precise match for the position (BUX 90–95). Applicants who come from outside the particular field – theologians, for example – are definitely also hired (CEX 59–60). It is evident that the emphasis here is on the personal potential ascribed to university graduates.

The criteria in Germany for selecting applicants with formal vocational qualifications are very similar to those in Switzerland. The starting point for these criteria is naturally the actual function or duties that the position involves in the respective company. This is followed by the impression the applicant makes plays a major role, alongside their final grades (CTR 91; CSW 108–119; TDS 61–62, TCL 39–42). Competences that applicants are expected to possess such as the ability to work in a team, adaptability and motivation were also frequently cited as important criteria when selecting applicants (DCA 122–127). 'Interest' – along the lines of finding enjoyment in the banking profession – is additionally expected. Some of these competences are called soft skills. It is assumed that applicants who have passed their final exams possess an adequate level of professional competence. Soft skills therefore constitute the criteria for selecting applicants. Structured interviews with situational questions are used to determine whether an applicant fulfils the selection criteria (CSW 108–119). In an attempt to assess applicants' motivation, they are requested to write an essay (personal statement regarding one's motivation for applying).

From the surveyed companies' point of view, however, competences and attitudes such as entrepreneurship, creativity, innovativeness and the ability to reflect on one's own choice of occupation are also of key importance (BDW 99). This was emphasised as the opposite of the attitude 'We will pass the time somehow'.

Although the in-company part of vocational training is generally given favourable marks (CSW 208–209), respondents say it is not comparable with the demands placed on persons who hold a 'specific function as an employee'. According to the respondents, trainees 'successfully complete' their vocational training. However, this does not always result in the quality that is required in everyday working life. Although they acknowledge the value of training that is geared to day-to-day practice, the respondents made it clear that they view such training only as a foundation for vital continued development in the areas of personal dedication and responsibility. Positive mention was made of the ability to be deployed on a productive basis without delay (DCA 174–175).

The selection criteria for holders of a Bachelor's degree exhibit a number of differences compared to the selection criteria for persons who have successfully completed formal vocational training. As a rule, respondents described the expectations placed on persons holding a Bachelor's degree as 'higher' than those placed on vocationally trained individuals (CTR 103; CSW 122–123 TCL 130–137).

According to the companies surveyed, the individual's academic record is important, as well as their level of interest and motivation. In areas that involve close contact with customers, great importance is attached to 'personality' because, according to the respondents, employees must be 'on the same level as the customer' (similarly also: DCA 140–141). The 'ability to resolve conflict' and 'communication skills' (CDR 203–207), 'analytical and conceptual skills' and 'internationality' (DCA 136–139) were particularly stressed. Companies surveyed expressly stated that candidates with a Bachelor's or Master's degree are assumed to have greater analytical skills and learning ability than persons who have completed formal vocational training (SCE 145). In contrast, one respondent viewed banking apprenticeships as being 'highly tailored to the particular bank' (DCA 166–167) with the consequence that although persons who complete this training can be put to use faster, some activities require a broader range of skills than are taught during the apprenticeship.

The willingness to work on a 'hands-on' basis is also important (DCA 142–145; ADB 73). Academic 'detachment from reality' was considered to be a minus point.

A reciprocal effect between the companies' assessment of graduates with a Bachelor's degree and these applicants' expectations could be observed during the interviews. Participating companies reported that persons who hold a Bachelor's degree usually expect to enter their company at a higher level, specifically with regard to their salary and chances for promotion (DCA 168–175, 176–179).

### **(c) Typical Career Paths**

The statements made regarding career paths during the interviews confirm and expand upon the opinion expressed by the companies surveyed that vocationally trained persons and persons who hold a Bachelor's degree are not in competition with one another.

It was often noted that anyone who has proven themselves could work their way up to nearly any position in the respective company (for an example, see also CTR 132–135) and that after several years, the type of education one has no longer plays a role. However, all of the companies surveyed had separate and clearly delineated career paths for vocationally trained employees and for employees who hold a Bachelor's or other degree. This differentiation consequently means different advancement programmes such as management trainee programmes (DCA 218–225; NCK 146–154; CDR 323–329). A distinction must be made here between the theoretically desirable motto 'may the best man win' (CEX 43–44) and day-to-day practice where, particularly in the companies in England, there is a large degree of separation between vocationally trained persons and individuals who have earned a Bachelor's degree.

There are interesting indications that the notion of what a career is or what type of career is of use to employers is changing. Respondents expect an increased delayering of hierarchies as projects gain in importance. In other words, today, 'careers' no longer closely follow the company hierarchy route where the crucial

measure is the number of people for whom one is responsible. Other criteria such as remuneration that rewards successful project management now play a role (NCK 155–170). It is also important for companies to hold on to employees with technical know-how and expertise. However, it can be in some cases that technical know-how and expertise are not consistent with the requirements for a typical career when the way to the ‘top’ entails responsibilities that revolve around other fields of activity such as tasks that are more administrative or managerial in nature (TDS 79–86). To solve this potential dilemma, ‘specialist career paths’ are now being developed alongside the traditional ‘management career path’.

#### **(d) Satisfaction with the National Education System**

The companies surveyed in all three countries were found to be relatively satisfied with the respective national education systems.

The respondents in England felt that there is a shortage of applicants with an academic degree, particularly in engineering and in mathematical/technical fields. On the other hand, they also said that there is a wealth of university graduates with degrees which they do not specifically need.

A shortage of skilled workers with vocational qualifications is also lamented, particularly in the technology and chemical sectors. The respondents regret that England has devoted too much attention to academic education. ‘I think in UK even more so, because our education is pushed out. It has drawn a lot people into the graduate route who, probably in the past, would have gone through the vocational training route. I am not sure that that was necessarily a good thing’. (BUX 62).

As a rule, the companies surveyed in Germany are satisfied with vocational training even though some noted that it has become more difficult in recent years to find very good trainees. ‘This means that the quality of the applicants for banking training has declined continuously in recent years’. (CDR 632). Companies in the technology or telecommunications sector pointed out that there are not enough applicants with a university degree that would be a good fit. One point of criticism expressed about the content of Bachelor’s degrees is the lack of practical relevance. This criticism was combined with the demand that universities should take the Bologna Process seriously and view employability as the aim of Bachelor’s degree programmes. Generally speaking, a fundamentally negative attitude towards the Bachelor’s degree is not, however, to be observed in German companies. The Bachelor’s degree programmes at colleges of advanced vocational studies are rated very highly because practical in-company training comprises a large segment of these programmes.

All sectors in Switzerland gave vocational training very positive marks. Training that is provided by universities of applied sciences – whose students have generally already completed formal vocational training and then earn a Bachelor’s degree – is held in particularly high regard. The chemical and pharmaceutical sectors reported a shortage of suitable candidates for their vacancies. The telecommunications sector was even more emphatic about the shortage of engineers. There was also

no criticism of vocational training to be heard in the interviews conducted with respondents from the mechanical engineering sector. Instead, there was criticism of the Bachelor's degrees granted by universities. Here, the respondents charged that social and methodological competence is not taught in Bachelor's degree programmes at universities. In Switzerland, however, satisfaction with the different forms of training applicants have to offer is very high as a rule. It is highest with formal vocational qualifications.

### **(e) Use of Competence Models**

Recruitment is geared to the competence model used by the respective firm. All of the companies surveyed use their own competence model, which most firms regard as a confidential internal document. In most cases, these models were developed by external service providers, the majority of which were management consultancies. Most of the companies surveyed have been using a competence-based model in their recruitment activities for an average of approximately 6 years. These models usually take a behaviourist or generic approach to the concept of competence. In other words, core competences which a company's employees should have are outlined in a competence model where they are described and explained in greater detail. Core competences apply to employee behaviour in specific work contexts. Some models provide for different levels of the respective core competence. For example, a vocationally trained employee is not expected to reach the same level of accomplishment in a core competence as an employee who holds a Bachelor's degree. Professional competence also plays a role in competence models. It should also be covered during the recruitment process. However, the substantive focus of these models is clearly on social/personal competences.

## **Conclusion**

Vocational training is very positively rated in both Switzerland and Germany. All of the companies surveyed in Switzerland and Germany provide in-house vocational training. In England, some of the companies surveyed expressly regretted that there were too few good applicants and/or employees with vocational qualifications. All in all, the interviewees in England had considerably less experience with vocationally trained individuals. Only in a few rare cases were vocationally trained people perceived as a useful pool for recruiting skilled workers for mid-level positions. This can be observed across various sectors. These companies provide almost no in-house vocational training, even though they all have fellow subsidiaries in Switzerland or Germany. In fact, the headquarters of six of the seven companies surveyed are located in Germany or Switzerland. Only one company – in the banking sector – had its own training programme.

The companies surveyed do not consider vocationally trained applicants to be in competition with applicants who hold a Bachelor's degree. Not only the envisaged career path but also one's continuing professional development within the respective company is different, depending on whether the individual is vocationally trained or has earned a Bachelor's degree. This correlates with the expectations of persons who hold a Bachelor's degree. It is interesting that a strong differentiation is made in Switzerland between a Bachelor's degree from a university of applied sciences and a Bachelor's degree from a regular university. The double qualification offered by graduates from a university of applied sciences is very positively rated and is accordingly credited during recruitment. In Germany, this differentiation is made between persons who earned a Bachelor's degree from a college of advanced vocational studies (whereby in some cases, the respective company was actively involved in the particular individual's training) and persons who earned their Bachelor's degree at a university. The first group is perceived as very vocationally oriented and practice oriented. In the case of the second group, there was uncertainty in some instances over what competences and skills these persons actually had to offer. It was not clear what the positive unique feature of this type of education is. Although persons who hold a Bachelor's degree from a university are currently given access to widely offered trainee and graduate programmes on the strength of their degree, there is however doubt whether, after completing what is presently a 3-year degree programme as a rule, such persons actually have the qualifications and tools needed for working on an academic/scientific level. In addition, many holders of a Bachelor's degree from a university have only rudimentary practical experience. Due to their 'education portfolio', such individuals are therefore at risk of being at a disadvantage vis-à-vis graduates from a college of advanced vocational studies in Germany or a university of applied sciences in Switzerland during recruitment.

In terms of improving the attractiveness of vocational qualifications in Germany and Switzerland, this means that such qualifications must offer individuals different options, namely, the option of earning a double qualification at one time and the option of earning a double qualification on a successive basis.

## References

- Benavot, A., Cha, Y.-K., Kamens, D., Meyer, J. W., & Wong, S.-Y. (1991, February). Knowledge for the masses: World models and national curricula 1920–1986. *American Sociological Review*, 56(1), 85–100, 16 p.
- Festing, M. (2004). Internationales personal management. In E. Gaugler (Hrsg.), *Handwörterbuch personal* (S. 966). Stuttgart: Schäffer-Poeschel.
- Georg, W. (2005). Vergleichende Berufsbildungsforschung. In F. Rauner (Ed.), *Handbook of VET research* (pp. 186–193). Bielefeld: W. Bertelsmann Verlag.
- Merten, K. (1995). *Inhaltsanalyse. Einführung in Theorie, Methoden und Praxis*. Opladen: Westdeutscher Verlag.
- Müller, W., & Shavit, Y. (1998). Bildung und Beruf im institutionellen Kontext: eine vergleichende Studie in 13. *Zeitschrift für Erziehungswissenschaft: ZfE* 1, H. 4, S. 501–533.
- Treiman, D. J. (1970). Industrialization and social stratification. In E. O. Laumann (Hrsg.), *Social stratification: Research and theory for the 1970s* (S. 207–234). Indianapolis: Bobbs Merrill.

# Chapter 3

## Exploring Intermediate Vocational Education and Training for 16–19-Year-Olds in Germany and England

Jeremy J.S. Higham, H.-Hugo Kremer, and David Yeomans

### Introduction

In England and Germany, there are groups of young people who do not have the qualifications or opportunities required to progress to advanced post-compulsory study, whether vocational/practical or liberal/academic in nature. The groups include those who wished to, but were unable to, enter the dual system in Germany or undertake an advanced apprenticeship in England. Nonetheless, the state has assumed responsibility to provide these young people with appropriate intermediate level full-time educational and training provision with suitable progression routes to advanced level further education, training or employment. This chapter will focus on aspects of the provision for these groups of young people, specifically those in full-time vocational education in England and Germany.

We have chosen to focus upon these groups of young people not only because the provision available offers some instructive comparisons between German and English approaches but also because these groups have attracted relatively little attention from policymakers, media or researchers in either country, and thus, the vocational characteristics of what is provided for them are ripe for exploration. We have also chosen to focus upon new aspects of provision: the introduction of personal learning in vocational schools in Germany and diploma courses in England, since this will give access to latest official thinking on what is needed (and, by implication, what has been missing in existing provision).

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## Research Problem

Historically, in Germany, the dual system has accommodated over 60% of an age cohort within the 350 occupations which make up the system. Over 1.5 million young Germans have typically been participating in the dual system at any given time. However, in recent years, serious problems have emerged with the dual system (Deissinger and Hellwig 2005; Ertl 2004; Kupfer 2010) which have given rise to the range of full-time intermediate vocational provision which is the subject of this chapter. The problems of the dual system over the past years can be briefly summarised as (1) overall more young people seeking places than were available; (2) substantial variations between sectors with a surplus of places in a few sectors and insufficient places in many others; (3) sectors with no tradition of engagement in the dual system, for example, information technology, which offer few places; (4) an increasing number of young people deemed unsuitable for entry to the dual system (although it might be argued that this is a ‘problem’ of the school system rather than the dual system); (5) new forms of full-time vocational education in competition with the dual system.

These problems with the dual system have given rise to a so-called *transition sector* designed to cater for young people who cannot find a place within the dual system. It has been growing rapidly and currently includes some 500,000 school leavers and thus has become a significant feature of German provision.

In England, 41% – around 273,000 young people – of the 2006 cohort of 16-year-olds did not reach intermediate level at the end of their compulsory education. This means that they failed to achieve at least five passes at grades A\*–C in GCSE or equivalent qualifications. Therefore, whilst there is no formal prohibition, it was unlikely that these young people would be able to embark on post-16 advanced level study in academic, vocational or work-based learning. Their post-compulsory choices within the education and training system were to continue in full-time education and attempt to reach intermediate level as ‘second chance learners’, embark on work-based learning within the Entry2Employment programme or begin an intermediate level apprenticeship. Further alternatives were to leave the education and training system and either get a job without training or not engage in employment, education or training at all. The most popular option for this group of young people was to engage in full-time education, either in schools or further education colleges. In 2006, 52% of post-compulsory 16-year-olds participating below advanced level were in full-time education, 11% were in work-based learning, that is, jobs with training (the nearest English equivalent to the German dual system) and 36% were either in jobs without training or were not in employment, education or training (DCFS 2007). These data show that full-time provision was the most likely destination for young people unable to progress to advanced level and accounted for 23% of the total cohort of 16-year-olds in 2006. This group, the focus of this chapter, thus comprises significant numbers of young people in England.

Having established the relative sizes of the English and German groups we are focusing upon in this chapter, we now provide brief sketches of the provision which has been available to these groups over the last 20 years or so, before turning to a detailed analysis of contemporary provision in England and Germany.

In Germany, the dual system provides the benchmark and the preferred destination for young people wishing to undertake VET. It provides a well-established route into work and vocations. It has ‘cultural strength’, derived in no small measure from its salience to the concept of *beruf* (Deissinger and Hellwig 2005). However, because of the emerging problems with entry to the dual system described above, the transition from the educational system to vocational education and employment is becoming problematic for more and more young people. The growing transition sector is a reaction to these developments.

Current provision in the transition sector takes place in vocational schools in four main forms: (1) The *basic vocational training year* (*Berufsgrundschuljahr*) provides specialised vocational training. It can be accepted as a substitute for the first year of the dual system. This provision is regulated by the individual states (Länder) and thus takes different forms in different Länder. In some sectors, it can also be taken in *Berufsfachschule*. (2) The *pre-vocational training year* (*Berufsorientierungsjahr – BVJ*) is a 1-year training course giving experience of a range of occupational fields. The aim is to prepare young people for more specific vocational training, often through the basic vocational training year. (3) *Courses for pupils without apprenticeships* (*Klassen für Schülerinnen und Schüler ohne Berufsausbildungsverhältnis*) combine 2 days per week in vocational schools with 3 days per week in a company, a pre-vocational experience provided by the labour agency or in the *Werkstattjahr*. Again, the main purpose of this provision is to facilitate entry to the dual system. (4) *Full-time vocational training leading to vocational certificates* (*Höhere Berufsfachschule*) is provided in a range of occupational fields. Success in this may allow young people to switch to the academic route or enter the dual system.

One feature of these forms of provision is that they are mainly designed to prepare young people for subsequent entry to the dual system, by providing some pre-dual system experience and, in some cases, by mimicking the dual system itself. In these ways, they appear to be addressing perceived deficits in potential entrants to the dual system, that is, attending to supply-side problems. However, the provision appears unlikely to address the demand-side problems of the dual system outlined above.

English provision has had three main characteristics. First, it has been predominantly vocational or pre-vocational with very limited general education provision, certainly no distinct general or academic pathway (Hodgson and Spours 2008). Thus for 16-year-old intermediate learners, vocational courses have been the default provision. Often alongside this, they were expected to retake examinations in English and Mathematics if they had not achieved at least a grade C in these during compulsory education, though these courses have not been linked with their vocational learning. The second characteristic has been that vocational provision itself has been subject to frequent change, mainly through the reform

of qualifications which has been the favoured means deployed by policymakers. Vocational qualifications which have appeared and then disappeared since the mid-1980s have included the Certificate of Pre-Vocational Education, the Diploma in Vocational Education, General National Vocational Qualifications and Applied General Certificates of Secondary Education. Qualifications which have endured somewhat longer include the Business and Technology Education Council First Diploma and National Vocational Qualifications. The latest qualification, introduced from September 2008 are the new Diplomas which by 2013 were planned to be available to all 14–19-year-olds in 17 subjects each at three levels.

These qualifications have differed widely in terms of their philosophy and orientation, for example, the extent to which they emphasise specific occupational skills, the role of theory, the ways in which they are assessed, the extent and forms of employer engagement, their intended pedagogy and the ways in which they have been marketed to students. The constant instability of provision reflects deep uncertainty about what provision for this group of learners should be, or can be, and more fundamentally about the role of ‘middle track’ curricula and qualifications (that is, curricula and qualifications which stand between academic and occupationally specific provision) within the English system (Hodgson and Spours 2008). The third characteristic has been that, while some individual programmes have been designed to be internally coherent, there has been lack of national coherence in provision (Pring et al. 2009). This is despite attempts by central government to create such coherence, for example, through the development of new qualifications and qualifications frameworks.

The research problem which this chapter addresses is thus the characteristics of full-time intermediate level provision in Germany and England. We have shown that this provision caters for a significant, growing minority of young people aged 16 and 17 in both countries. It has a potentially important role to play in enabling these young people to acquire knowledge and skills and qualifications, which are seen as requirements for progression to further and higher education and, in the context of this book, to advanced apprenticeships in England and the dual system in Germany.

## Methodology

We turn now to the main focus of the chapter – an analysis and comparison of aspects and examples of full-time intermediate level provision for 16–19-year-olds in Germany and England.

The German element (“[Personal Learning in Germany](#)”) is based upon initial research into the introduction of personal learning in the transition sector in 11 vocational schools in NRW. The research project commenced in February 2009 and will run until February 2012. It is being undertaken by researchers in the Centre of Vocational Education and Training, University of Paderborn and by teachers in the vocational schools. A range of methods are being used including questionnaires, focus groups and interviews. The research has a strong developmental component

involving the cooperative design and development of instruments for personal learning by the researchers. Since both the programme and the research are in their early stages, the account of the findings which is provided is inevitably tentative and provisional. (Beutner et al. 2009)

The English element (“[Intermediate Level Diplomas in England](#)”) is based upon the National Evaluation of Vocational Specialist Schools undertaken by researchers at the University of Leeds between 2006 and 2009. The research involved a combination of annual questionnaires to all vocational specialist schools and case study visits to 15 of these schools (Higham and Yeomans 2009). Most of the case study schools were visited on two or three occasions. These visits involved interviews with local authority and school staff, staff from partners including colleges and employers and students. There was also some observation of vocational learning. Relevant documents were collected and analysed.

In the longer term context of our research, we are in the process of developing a framework for analysis which will allow for the identification and comparison of key aspects of vocational provision in England and Germany as well as in other contexts (we have recently conducted research on vocational provision in Canadian high schools which is also likely to be susceptible to analysis using the framework). In this chapter, we deploy some elements of our emerging analysis including the aims and purposes of interventions, planned and enacted curricula, pedagogical approaches, student recruitment and institutional resources.

## Research Findings

Here, we present brief accounts of two of the latest developments in intermediate level vocational provision in Germany and England. We see this as significant because they provide access to latest policy thinking about intermediate level provision in both countries.

### *Personal Learning in Germany*

Personal learning is not a completely new challenge for vocational education. There are links to a variety of discourses or reform agendas such as the ‘learning area concept’ (*Lernfeldkonzept*), ‘learning with new media’ and ‘self-regulated learning’. However, personal learning as a distinct concept is now being powerfully promoted, and in NRW, the right to personal learning is guaranteed through an education act (Kunze 2009; Zoyke 2009).

Personal learning in the 11 vocational schools in NRW is intended to be implemented in the context of existing qualifications. The 11 schools involved in the project have been allowed to select the courses and qualifications in which they will aim to develop innovative practice in personal learning. Thus, a range of courses and

qualifications within the transition sector are being used as contexts within which to develop personal learning. Competence development and career/vocational choice are areas for developing innovative practice across all qualification contexts. Three learning areas (Ertl and Kremer 2006) are defined in the project: (1) from general education to vocational school – analysing the competence and environment of the students; (2) learning in working areas – cooperation and interaction in multicultural environments and (3) from the transition sector to apprenticeship or work – attitude and competence profile.

These three areas, and indeed the concept of personal learning itself, are very loosely defined and described in policy. The schools and the teachers are expected to transform the concept of personal learning into innovative practice. Personal learning is consequently emerging as an enormous challenge for the teachers in the transition sector. While there is some commonality across the schools in terms of curricular and qualifications frameworks, there are substantial differences in relation to school localities and size and in the sorts of students with whom personal learning is implemented. It is likely therefore that a number of different versions of personal learning will emerge.

As noted above, personal learning has been defined in policy only in the most general terms. It appears to have implications for the pedagogical relationship between teachers and learners, and the intention is to enable students to learn on the basis of their individual needs, experiences and contexts in ways which bring about individual personal competence. In order to achieve this, it would seem that it will be necessary for schools to create complex learning environments which support self-regulated and situated learning. However, the detailed implementation of competence diagnosis and development and the creation of complex learning environments have been left to the individual schools and teachers.

Students participating in personal learning are heterogeneous in their educational and social backgrounds. They have a wide range of existing competences and different motives and circumstances which have led to entry to the transition sector. There are also huge local differences between the types of participating students in different vocational schools. However, it is possibly significant that across the 11 schools, there is a high proportion of students with a migrant background. Local differences appear to be more significant than any differences which occur across qualification types. Thus, in addition to the institutional and qualification differences, the research will also provide opportunities to explore the ways in which personal learning plays out with different groups of students.

Across the schools, a wide range of learning approaches including learning diaries, portfolios and study workshops have been developed. However, there are no common approaches across all the schools, and much depends upon the willingness, skills and competence of the teachers to develop these.

The curriculum depends upon the course type being followed. These courses include a range of vocational orientation and preparation courses, some leading to secondary and/or vocational qualifications and, through the vocational foundation year, giving possible credit in the dual system. These course types contain different combinations of vocational and general education.

Personal learning itself, however, is not a curriculum as such in that it does not specify any particular content but is an approach or orientation to a range of courses and qualifications within the transition sector. Perhaps the key point to emerge from the research so far is that the concept of personal learning is currently more of a political slogan than an action framework for the teachers. Thus, the teachers have the task of realising personal learning based upon their individual theories about the concept. It is not therefore surprising that even at this early stage, there are significantly different interpretations and experiences of personal learning and the associated learning environments in the vocational schools.

### *Intermediate Level Diplomas in England*

As noted above, the characteristic English approach to perceived weaknesses in full-time vocational education has been to use qualification reform to bring about change. The latest reform has seen the introduction of a new suite of diploma qualifications from September 2008. This now comprises 14 diploma ‘lines of learning’ (three lines were dropped by the new Conservative/Liberal Democrat coalition government in June 2010) which are being progressively introduced during the period 2008–2012. The lines of learning include business, administration and finance; construction and the built environment; engineering; creative and media; hair and beauty studies; sport and active leisure.

Each diploma will be available at foundation, intermediate and advanced levels. The intermediate level diploma, which is our main focus in this chapter, can be offered both pre-16 as part of compulsory education (as an alternative to GCSEs) and post-16 as an alternative to (or replacement for) existing vocational qualifications (e.g. BTEC, City and Guilds). At pre-16, the intermediate level diploma is normally taken as a 2-year course; at post-16, it is more likely to be a 1-year course. The intermediate diploma (both pre and post-16) promises possible progression to advanced level full-time study or advanced work-based learning. At both pre- and post-16, the intermediate diploma can be offered by both schools and further education colleges (although when they were introduced, heavy emphasis was placed on collaborative working between a number of different partners).

The then new labour government’s stated intention was that by 2013, a substantial proportion of post-16 learners would be taking diplomas. In relation to the group of learners who are the subject of this chapter that government’s policy was that the main, perhaps the only, full-time courses open to them would be the diplomas. Thus, when participation in education and training was planned to be made compulsory for all 17-year-olds in 2013 and for 18-year-olds in 2015, government policy anticipated that the diplomas would play a major part in catering for this increased participation (DfES 2005).

Some early accounts of the development and implementation of diplomas are now beginning to emerge together with commentaries on their general

characteristics (e.g. 14–19 Alliance 2010; Ertl et al. 2009; Hatcher 2008; Hodgson and Spours 2007, 2010; Lynch et al. 2010; Ofsted 2009). We draw upon these accounts in what follows as well as our own research in vocational specialist schools which was undertaken as planning and early implementation of the diplomas was taking place.

The purpose and aims of the diplomas have been outlined in a number of official publications and websites (Directgov 2009; QCA 2009). They are intended to have the dual purposes of both preparing young people for employment or further and higher education through engagement with broad vocational sectors. The official aims also place considerable emphasis on curricular and pedagogical innovation, especially the blending of theoretical and applied learning. Publicity aimed at attracting young people to the diplomas is targeted at those students who are believed to want something different, especially in terms of teaching and learning styles and assessment methods, from GCSEs and A-levels. Diploma learning is also stated to include learning through doing, interaction with other learners through group work and learning through the application of transferable skills.

One of the features of the difference of diplomas is the stipulation that ‘a minimum of 50% of all (principal) learning must be applied, that is, knowledge and skills must be set within the contexts of tasks, problems and situations that are related to work in the sector’ (14–19 Alliance 2010, p. 7; OCR 2008, p. 7), although precisely how this 50% should be calculated, for example, whether a distinction should be made between real and simulated contexts, remains unclear as does the enforcement of the stipulation. However, there is a clear necessity to establish good links with employers. In this context, much attention has been paid to the need to recruit employers able to provide 10 days work experience to all diploma students, but while this is undoubtedly a major challenge, the provision of a good supply of ‘tasks, problems and situations’ which provide realistic contexts for diploma work seems far more challenging.

All diplomas have three main components. These are (1) principal learning which provides the main sector-based content and accounts for 52.5% of the intermediate diploma, (2) generic learning which provides functional and wider skills (25% of the diploma) and (3) additional and specialist learning which allows the inclusion of a wide range of specialist and other courses (22.5% of the diploma). The overall approach to diplomas therefore reflects the general approach to vocational education for 14–19-year-olds in England with its emphasis on generic employability skills, combined with vocational contextualisation, experience and employer involvement.

A limited amount actual assessment of diploma courses has taken place, and therefore, it is still too early to reach any judgements on the ways in which this may interact with curriculum and pedagogy to shape the learning experience. The diploma places more emphasis upon internal assessment than is the case with academic courses with typically over three quarters of work internally assessed. However, this internal assessment is subjected to what one awarding body refers to as a ‘medium to high level of control’ (OCR 2008), meaning the application of tight assessment criteria and extensive moderation procedures. This is reminiscent

of the ‘curriculum reinforcement’ role of assessment in the earlier General National Vocational Qualifications in England (Higham 2003).

Diplomas are intended to be provided by partnerships of schools, colleges, training providers and employers working together. Those intending to provide diploma courses have been required to go through a ‘gateway’ process in which they demonstrate the strength of their partnership, including employer engagement. Thus, there is an expectation that a range of partners will contribute to each individual diploma course, perhaps by teaching different components or units.

Institutions taking on diplomas have received some additional funding, but this is unlikely to be ongoing, and to a large extent, they are expected to provide the courses from their existing resources. Partnership arrangements are expected to ensure that a wide range of staff expertise and facilities are available, with the more specialist equipment provided through colleges and employers rather than schools. Several of the vocational specialist schools we visited had been able to take advantage of the opportunity to establish post-16 centres (sixth forms) to equip themselves with new resources, for example, construction and engineering workshops, ICT suites with state-of-the-art digital editing equipment, hairdressing and beauty salons depending upon the diplomas they were taking on.

Student recruitment to diplomas in the first 2 years is considerably lower than had been anticipated, especially for post-16 students, including those studying at intermediate level (14–19 Alliance 2010). There is also some evidence that diploma students have lower prior attainment than those not taking diplomas (O’Donnell et al. 2009).

The future of diplomas is highly uncertain. While evaluation and inspection reports have shown that well-planned and taught courses can engage and motivate young people, including the group which is the subject of this chapter, the take-up has been much smaller than anticipated, and there is evidence of ignorance, indifference, caution and suspicion among some teachers (Times Educational Supplement 2010). The response of higher education has also been mixed and cautious (Hodgson and Spours 2010). The diplomas were a flagship New Labour government policy, and the formation the new coalition government in May 2010 has placed their future in jeopardy. At the very least, it seems likely that diplomas will have a considerably lower profile than they had under the previous government. This though begs the question as to what provision the new government will favour for full-time intermediate level students.

## Concluding Remarks

Most comparative accounts of VET emphasise differences between Germany and England and advance a range of historical, social, economic and institutional factors which explain these differences (e.g. Dehmel 2005; Green 2000). Concomitantly, these accounts also tend to argue for the weakness of vocational education in

England compared to Germany. It is not our intention to challenge the overall thrust of these accounts. While there is good VET practice in England, it is evident that at a systemic level, the German dual system is more extensive, has higher status and delivers better quality than much English vocational education.

However, at this relatively early stage in our comparative project, we found significant similarities between Germany and England in relation to the provision for the group of young people who are the subject of this chapter. We conclude by highlighting five of these similarities:

1. Provision in both countries lacks identity and clarity of purpose. In England, this is evident through the constant chopping and changing of qualifications, of which the diplomas are latest, over a long period of time. Their aims and purposes remain subject to uncertainty despite, or perhaps because of, successive attempts by government to clarify these (House of Commons Education and Skills Committee 2007). In Germany, the growth of the transition sector has produced a jungle of qualifications with differing purposes and aims – a criticism frequently levelled at English VET.
2. Closely linked to our first point, provision in both countries is defined against and shaped by other higher status provision – the dual system in Germany and the academic track in England. In Germany, this has led to attempts to simulate aspects of the dual system but without the distinctive and central employer contribution. In England, full-time intermediate level vocational provision has long lacked status. It has arguably acted as at best a refuge and at worst a warehouse for those deemed unable to proceed to advanced level study. In addition, the search for parity of esteem with academic provision has resulted in persistent academic drift within vocational education, including intermediate level provision. This typically manifests itself in greater emphasis on knowledge acquisition in the curriculum and formal, often written, external summative assessment. This is not yet the case with the diplomas but remains a distinct possibility.
3. There is heavy emphasis on pedagogical innovation in both countries. Personal learning is pursued within the transition sector in Germany. In England, the diplomas represent an attempt to blend applied and theoretical learning. The clear implication of this emphasis is that the official policy diagnosis that the weaknesses of provision in both countries are fundamentally internal rather than being rooted in their structural locations, for example, as a middle track qualification in England or in demand-side limitations, for example, a shortage of apprenticeships in the German dual system.
4. The provision provides uncertain progression to work, training or higher education in England and to the dual system in Germany. In England, the track record of progression from intermediate level courses has been mixed to say the least, and there are no grounds for thinking the diploma will do better. In Germany, while the transition sector may address ‘deficiencies’ in potential dual system entrants, it can do nothing to produce increased and broader demand within the dual system itself.

5. Provision in both countries is complex and lacks coherence, and therefore, it is not surprising that there is often limited understanding among students, teachers, employers and parents. Early findings from our German research, for example, suggests that many students are not clear why they are doing the courses they are doing nor where they might lead. In England, inspection evidence from the first group of diploma students suggests that many are not aware or do not understand the programmatic, integrated character of the diploma and focus only upon the principal learning (Ofsted 2009).

While there are differences between provisions in the two countries, these significant similarities suggest that there may be comparable shaping forces operating in both countries. The possible identification of these forces and the ways in which they play out in the different contexts are likely to be subjects of our continuing collaboration. We have found this comparison between German and English provision fruitful, not least for the similarities which have emerged, in contrast to the differences which many comparative accounts highlight. However, what is ultimately crucial for both countries is the extent to which intermediate level vocational provision is fit for purpose in meeting the learning and progression needs of the young people themselves, employers requirements and wider societal purposes. It is too early to make definitive judgements in relation to the initiatives which we have examined in this chapter, but the indications are that significant problems and issues are emerging in both countries.

## References

- 14–19 Alliance. (2010). *Diploma discussion paper*. Available online at: [http://www.ioe.ac.uk/Diploma\\_discussion\\_May2010.pdf](http://www.ioe.ac.uk/Diploma_discussion_May2010.pdf). Accessed 21 May 2010.
- Beutner, M., Frehe, P., Kremer, H.-H., & Zoyke, A. (2009). Individuelle Förderung – Einblicke in Strukturen und erste empirische Ergebnisse des Modellprojektes InLab. *Kölner Zeitschrift für Wirtschaft und Pädagogik*, 24, 15–39.
- DCFS. (2007). *Specialist schools guidance*. Available online at: <http://www.standards.dfes.gov.uk/specialistschools/guidance2007/?version=1>. Accessed 4 Sept 2007.
- Dehmel, A. (2005). *The role of vocational education and training in promoting lifelong learning in Germany and England*. Oxford: Symposium Books.
- Deissinger, T., & Hellwig, S. (2005). Apprenticeships in Germany: Modernising the dual system. *Education and Training*, 47(4/5), 312–324.
- DfES. (2005). *14–19 education and skills implementation plan*. London: DfES.
- Directgov. (2009). *The Diploma*. Available online at: <http://yp.direct.gov.uk/diplomas/>. Accessed 24 June 2009.
- Ertl, H. (2004). Tradition and reform: Modernising the German dual system of vocational education. In G. Hayward & S. James (Eds.), *Balancing the skills equation: Key issues and challenges for policy and practice* (pp. 117–148). Bristol: Policy Press.
- Ertl, H., & Kremer, H.-H. (2006). Curricular reform and college-based innovation in vocational education and training in England and Germany. *Research in Comparative and International Education*, 1(4), 351–365.
- Ertl, H., Stanley, J., Huddleston, P., Stasz, C., Laczik, A., & Hayward, G. (2009). *Reviewing diploma development: Evaluation of the design of the diploma qualifications*. London: DCSF.

- Green, A. (2000). Lifelong learning and the learning society: Different European models of organization. In A. Hodgson (Ed.), *Policies, politics and the future of lifelong learning* (pp. 35–48). London: Kogan Page.
- Hatcher, R. (2008). Academies and diplomas: Two strategies for shaping the future workforce. *Oxford Review of Education*, 34(6), 665–676.
- Higham, J. (2003). Curriculum change: A study of the implementation of general national vocational qualifications. *Curriculum Journal*, 14(3), 317–340.
- Higham, J., & Yeomans, D. (2009). *The evaluation of the applied learning specialist schools programme: Final report* (p. 51). London: SSAT.
- Hodgson, A., & Spours, K. (2007). Specialised diplomas: Transforming the 14–19 landscape in England? *Journal of Education Policy*, 22(6), 657–673.
- Hodgson, A., & Spours, K. (2008). *Education & training 14–19: Curriculum, qualifications & organization*. London: Sage.
- Hodgson, A., & Spours, K. (2010). Vocational qualifications and progression to higher education: The case of 14–19 Diplomas in the English system. *Journal of Education and Work*, 23(2), 95–110.
- House of Commons Education and Skills Committee. (2007). *14–19 Diplomas*. London: House of Commons.
- Kunze, I. (2009). Begründungen und Problembereiche individueller Förderung in der Schule. Vorüberlegungen zu einer empirischen Untersuchung. In I. Kunze & C. Solzbacher (Hrsg.), *Individuelle Förderung in der Sekundarstufe I und II* (pp. 13–25). Esslingen: Schneider Verlag Hohengehren.
- Kupfer, A. (2010). The socio-political significance of changes to the vocational education system in Germany. *British Journal of Sociology of Education*, 31(1), 85–97.
- Lynch, S., McCrone, T., Wade, P., Featherstone, G., Evans, S., & Haynes, G. (2010). *National evaluation of Diplomas: The first year of delivery*. London: DCSF.
- O'Donnell, L., Lynch, S., Wade, P., Featherstone, G., Shuayb, M., & Golden, S. (2009). *National evaluation of Diplomas: Preparation for 2008 delivery*. London: DCSF.
- OCR. (2008). *Level 2 principal learning in creative and media H807*. Cambridge: Oxford Cambridge and RSA Examinations.
- Ofsted. (2009). *Implementation of the 14–19 reforms, including the introduction of Diplomas*. London: Ofsted.
- Pring, R., Hayward, G., Hodgson, A., Johnson, J., Keep, E., Oancea, A., Rees, G., Spours, K., & Wilde, S. (2009). *Education for all: The future of education and training for 14–19 year olds*. London: Routledge.
- QCA. (2009). *Vision for the Diploma*. Available online at: [http://www.qca.org.uk/qca\\_19355.aspx](http://www.qca.org.uk/qca_19355.aspx). Accessed 24 June 2009.
- Times Educational Supplement. (2010). *Diplomas struggle to build a profile*. Available online at: <http://www.tes.co.uk/article.aspx?storycode=6009343>. Accessed 21 May 2010.
- Zoyke, A. (2009). Aktuelles Stichwort: Individuelle Förderung. *Kölner Zeitschrift für Wirtschaft und Pädagogik*, 24, 95–114.

# Chapter 4

## Apprenticeship, Pathways and Career Guidance: A Cautionary Tale

Richard Sweet

### Apprenticeship: Policy Aspirations, Failures and Successes

... It is important that every community in every State of this nation develop more school-to-work programmes. The best alternative is to craft an American version of European apprenticeships – not necessarily just like the German system, but one that blends vocational and academic education in high school, provides students meaningful work experience, and continues their training after graduation.

Bill Clinton, Governor of Arkansas, *Vocational Education Journal*, October 1991.

Very few OECD countries have large apprenticeship systems for their youth. Only in Germany and Switzerland do more than half of all young people appear to enter adult employment through an apprenticeship. In Austria, Denmark, Norway and the Netherlands, somewhere between a quarter and a half of young people enter into arrangements that are referred to as apprenticeships,<sup>1</sup> although their characteristics are in many ways quite dissimilar.<sup>2</sup> In Ireland, the proportion of young people

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<sup>1</sup>This is based on estimates contained in OECD (2000). More recent estimates of the size of upper secondary vocational pathways (school-based plus apprenticeship) are given in Table 4.1, but the source used to compile Table 4.1 does not provide a separate and reliable estimate of the size of apprenticeship pathways.

<sup>2</sup>For example, in terms of duration; the balance, timing and sequencing of enterprise-based and institutional-based periods; the balance in the curriculum between general education and vocational skills; the breadth and specificity of the occupational families that are covered; regulatory arrangements; financing mechanisms; and wage rates.

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who enter an apprenticeship seems to be slightly lower than in the latter group of countries. Most other countries get by largely without apprenticeships, or with quite small apprenticeship systems for youth, or by relying upon other ways of achieving the same objectives. And it does not seem to do them too much harm, as Martin Carnoy has pointed out in comparing economic growth over a 26-year period in countries with quite different types of vocational education systems (Carnoy 2009).

And yet despite this, apprenticeship has proven to be a seductive notion: the Rhein maiden of the policy world, luring the unwary – such as Bill Clinton – onto the hard rocks of institutional reality. The Clinton administration invested around a billion dollars in the School-to-Work Reform Act, the centrepiece of which was to be a revival of apprenticeship for youth in America. The proposal to revive youth apprenticeship followed a series of enthusiastic missions from the United States to Europe, almost exclusively to Germany, to look at apprenticeship arrangements during the 1980s and early 1990s. And yet almost nothing can be seen as a lasting outcome from this very large investment. The policymakers from the United States did not really understand what they were looking at when they went to Germany, and they failed to understand the institutional underpinnings of large apprenticeship systems for youth (OECD 1999a). Youth apprenticeships were resisted by many in the trade union movement, as they would have competed with traditional adult apprenticeships in sectors such as construction; regulated links between occupations and qualifications were scarce; arrangements for institutional co-operation between employers, governments and trade unions often did not exist; sectoral co-operation was weak; local quality assurance arrangements for training young people within firms and for linking firms with off-the-job educational institutions were commonly absent; mechanisms for fixing training wages in relation to adult wages were often absent; legal and regulatory arrangements were missing; and apprenticeship as a federal initiative often sat uneasily with the states that saw arrangements for education and training as their exclusive constitutional responsibility. Frankly, it was bound to fail.

Other countries have had similarly unsuccessful experiences when attempting to create or revive large apprenticeship systems for youth. In the early 1990s, Korea sought to imitate the German dual system of apprenticeship. The experiment failed partly because of the dominating role adopted by government and the minimal role allowed for other social partners. Another reason was the lack of a tradition of training within the workplace: training within the *chaebol*, the large enterprises that have been responsible for much of Korea's recent economic growth, is largely seen as the responsibility of special training departments. As a consequence, shop-floor supervisors, who play a vital role in successful apprenticeship systems, focused largely upon production problems and did not see the development of skills in apprentices as part of their normal role (Jeong 1995). Sweden in the late 1990s attempted to reintroduce apprenticeship after abolishing it in the early 1970s. This also failed; employers had an alternative model (mandatory unpaid work placements as part of upper secondary schooling) that they had become used to, and the initiative was targeted only upon the weakest students, rather than, as in Austria's

apprenticeship system, including them as a specially targeted and resourced focus within the mainstream programme (OECD 1999b).

These failures have not dampened the enthusiasm for apprenticeship of many policy analysts. In some influential quarters, apprenticeship is still being pulled out of the cupboard as an almost exclusive solution to many of young people's school-to-work transition problems (Quintini and Martin 2006).

Of course, there have also been some successes. One is Ireland, where high completion rates, growing participation since the mid 1990s, stakeholder satisfaction and high-quality training have been attributed to a combination of the adoption of a standards-based approach; strong social partnership between government, employers and unions; a responsive national training agency; and a responsive system for off-the-job training (Hartkamp and Rutjes 2001; Field and Dubchair 2001; O'Connor and Harvey 2001; O'Connor 2006). In Norway, a quite distinctive model of apprenticeship for young people was introduced in the mid 1990s as part of sweeping reforms to upper secondary education. Although not without its problems (Payne 2002), the reforms resulted in a very rapid growth in both youth participation and employer participation. The speed with which the reforms were accepted owes much to effective negotiations between well-organised employers, unions and government; a rational wage structure; and the creation of intermediary organisations at the local level to assist firms in training (OECD 1998). And in the Middle East and North Africa, quite small and fragile experimental systems in countries such as Syria and Egypt sit alongside a robust although moderately sized apprenticeship system in Turkey that is underpinned by extensive legislation and regulation, good institutional arrangements involving employer associations, trade unions and governments and mechanisms for co-operation between educational institutions and firms at the local level (Sweet 2009).

The institutional arrangements that help to ensure the success or failure of apprenticeship that are illustrated by the above examples are reasonably well understood: both the 'hard' factors such as legislation and regulations, training wages, financing systems and qualification and certification arrangements and the 'soft' factors such as the quality of governance arrangements and social capital at the local and sectoral levels (see, e.g. Ryan 2000). For the balance of this chapter, I will be looking at an additional set of factors that help to underpin apprenticeship: the relationship between post-compulsory pathways, including apprenticeship pathways, on the one hand, and aspirations, equity and career guidance on the other. The analysis concentrates upon countries with large or medium-sized apprenticeship systems.

## **Pathways: An Introduction**

A pathway can be thought of as the connection between an educational programme and its destinations, mediated by a set of institutional arrangements that include qualification systems, curriculum content, labour market arrangements and information and advice systems. The concept of a pathway as an organising frame-

work for understanding young people's transitions was first elaborated by Raffe (1994) and has since been developed by the OECD (2000) and in other work by Raffe (1998, 2003). It was a central organising concept both for the OECD's work on vocational education conducted in the mid 1990s and for its thematic review of transition that was published in 2000. The concept of a pathway has been highly influential. Many OECD countries have devoted a great deal of effort in recent years to changing and attempting to improve pathways between the end of compulsory education and the work force, for example, by introducing new qualifications, reforming qualification systems and attempting to improve articulation and transfer between different pathways. An example is Switzerland's creation of the *maturité professionnelle* that helps to open up a pathway from apprenticeship to tertiary education.

It is by now fairly standard to distinguish between three principal post-compulsory pathways: general education, apprenticeship type and school-based vocational (Raffe 2008). In many countries, these different pathways are associated with different institutional arrangements (e.g. gymnasia and vocational colleges) as well as with different education and training qualifications. Pathways can also be thought of in terms of the tightness of their link to later destinations (McKenzie 2002). *Tightly coupled* pathways such as Austria's general education programmes contain a relatively small share of the cohort, and nearly all graduates proceed to higher education. On the other hand, more *loosely connected* pathways such as Australia's upper secondary general education programmes contain a large share of the cohort, and graduates are more widely spread across higher education, vocational education and the labour market.

Pathways sit within wider institutional arrangements for the transition and cannot always compensate for their weaknesses. As an example, Polesel (2006) points out that while many of the features of Italy's upper secondary vocational education pathways are attractive, overall transition outcomes in that country are poor. He highlights poor quality teaching and learning and low achievement levels as significant factors. Also relevant here are unfavourable institutional arrangements in the Italian labour market, with high levels of employment protection, few opportunities for students to combine education with paid employment, few structured training opportunities and poor institutional co-operation between the social partners.

The relative size of post-compulsory pathways is a joint outcome of the aspirations and choices of young people, of the decisions of policy makers and of the differential rewards that pathways lead to as a result of wage fixation arrangements and other forms of labour market regulation. Their attractiveness and size can change over time as the result of all of these factors. Table 4.1 illustrates this by showing changes between 1998 and 2006 in the proportion of upper secondary students in vocational education (as opposed to general education) programmes in 25 OECD countries. Finland, Ireland, Norway and Spain are examples of countries in which vocational pathways have been growing. In Hungary, Korea and Poland, they have been declining sharply and have declined slightly in Denmark and Germany. Austria, the Netherlands and Switzerland are among the countries in which there has been little apparent change.

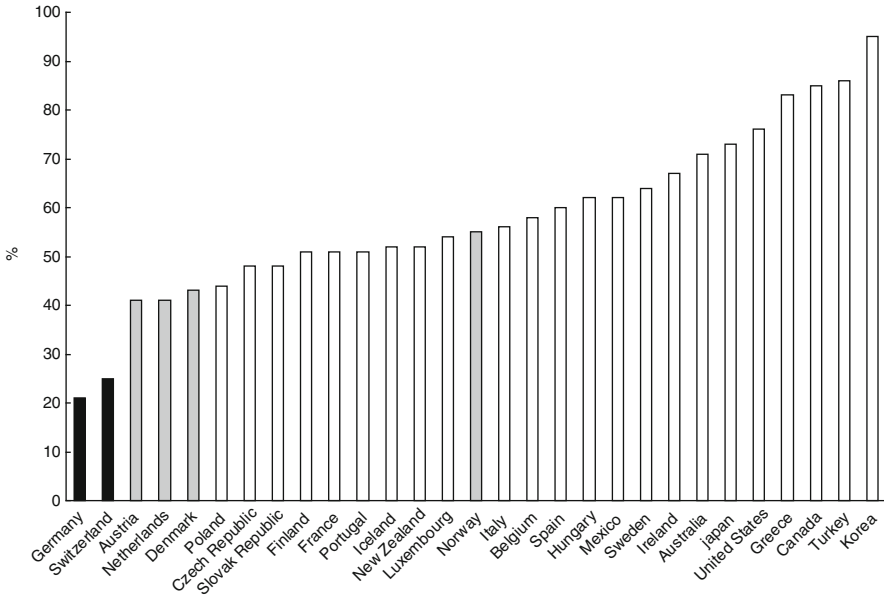
**Table 4.1** Enrolments in vocational programmes as a share of all upper secondary enrolments, 1998–2006 (%)

	1998	1999	2001	2002	2003	2004	2005	2006
Austria	77.5	77.9	78.6	79.0	79.2	78.6	78.5	77.9
Belgium	69.0	65.7	69.2	69.7	70.3	68.2	69.6	69.4
Czech Rep.	80.0	80.2	80.7	80.4	79.5	79.4	79.5	79.3
Denmark	51.8	53.3	54.6	53.0	53.6	46.8	47.9	47.8
Finland	52.0	53.2	56.7	57.2	58.8	60.1	63.9	65.4
France	56.4	57.2	56.7	56.3	56.4	56.5	56.4	43.1
Germany	64.6	64.6	63.3	63.0	62.2	61.2	60.3	59.4
Greece	32.6	25.8	35.2	40.0	36.0	34.0	36.0	33.9
Hungary	67.4	65.5	50.2	49.7	49.8	23.7	24.1	23.7
Iceland	33.2	32.8	36.4	38.3	35.1	38.5	36.8	36.7
Ireland	17.3	20.6	25.8	27.3	28.3	33.5	34.3	33.4
Italy	64.8	64.7	64.3	64.8	63.8	62.8	61.5	60.5
Japan	26.8	26.4	25.9	25.7	25.5	24.6	24.7	24.6
Korea	40.0	37.9	34.1	32.1	30.7	29.5	28.5	27.8
Luxemb.	68.0	63.7	63.8	64.0	64.7	63.9	63.4	62.9
Mexico	14.4	14.0	12.2	11.4	10.9	10.5	10.2	9.8
Netherl.s	66.0	66.6	69.9	69.2	69.1	69.1	68.2	67.5
Norway	52.5	53.6	57.6	58.0	59.2	60.5	60.8	60.0
Poland	67.6	66.1	62.1	60.9	54.3	49.5	45.0	44.0
Portugal	25.4	25.0	28.3	28.8	28.5	28.5	31.0	31.5
Slovak Rep.	m	79.6	77.6	76.4	75.4	74.1	74.2	73.7
Spain	21.5	31.2	35.6	38.0	37.2	38.7	42.6	42.5
Sweden	40.6	50.1	51.7	49.6	52.9	53.4	53.6	55.1
Switzerl.	65.7	65.4	65.0	64.6	65.0	64.8	64.7	64.2
Turkey	m	48.6	39.7	39.4	38.0	37.3	42.2	36.3

Source: OECD *Education at a Glance*, various issues, *m* missing

## Pathways, Aspirations and Equity

Different types of pathways contain different types of students. This is a result both of students' choices and of the operation of streaming, for example, through allocation to programmes by educational attainment or achievement or as a result of advice and guidance whether from family, friends, teachers or career guidance. Almost universally, general education pathways that lead to higher education contain higher-achieving students from more privileged family backgrounds, and they lead to jobs that carry higher economic rewards. The OECD's PISA data (OECD 2008a) shows that in all countries for which this type of data is available, those young people who enter vocational pathways have on average a lower socio-economic status level and lower achievement levels than those who enter general tracks. Furthermore, it clearly shows that where countries segment these vocational education programmes into different pathways, lower level programmes on average contain more of those from lower socio-economic status backgrounds and more with lower achievement scores than do the higher level programmes. After taking

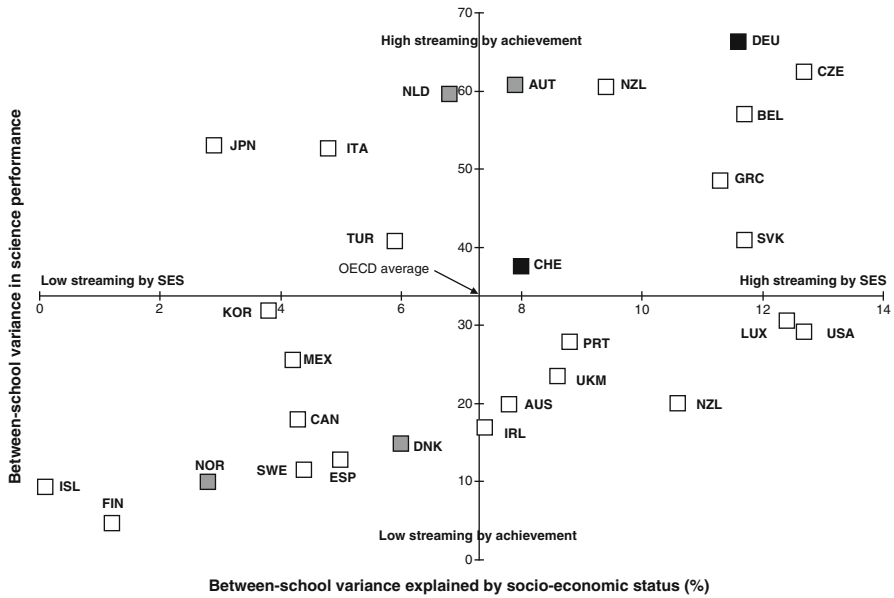


**Fig. 4.1** 15-year-olds aspiring to at least some form of tertiary education, 2003 (%) (Source: PISA 2003 database, special tabulation)

these factors into account, Ryan (1998), in a now classic paper on apprenticeship returns, suggests that there is not much basis for favouring apprenticeship over school-based vocational pathways when considering their outcomes, although there are some country-specific exceptions. In a later paper, he argues that there is limited evidence favouring better outcomes from vocational pathways than from general pathways (Ryan 2003).

The size and character of pathways are shaped both by policymakers' decisions and by young people and their parents' aspirations and choices. But aspirations can in turn be shaped by policy instruments such as streaming mechanisms and limitations on choice by restrictions on places and resources, as well as by the ways in which information and advice open up or constrain opportunities. Figure 4.1 shows the proportion of 15-year-olds who aspired to some form of tertiary education in OECD countries in 2003.

National differences in young people aspirations are very large indeed, and the pattern of these differences suggests that the size and nature of dominant national post-compulsory pathways has something to do with this. In Germany and Switzerland, the two OECD countries that have the largest apprenticeship systems for youth, only around one in five to one in four of all 15-year-olds expect to achieve a tertiary qualification. And in Austria, the Netherlands and Denmark, which have moderately large apprenticeship systems, the proportion of 15-year-olds aspiring to tertiary education is also relatively low. On the other hand, high levels of aspiration for tertiary study are found in countries such as Korea, Japan, Canada and the United States where upper secondary vocational pathways are quite small. In no country



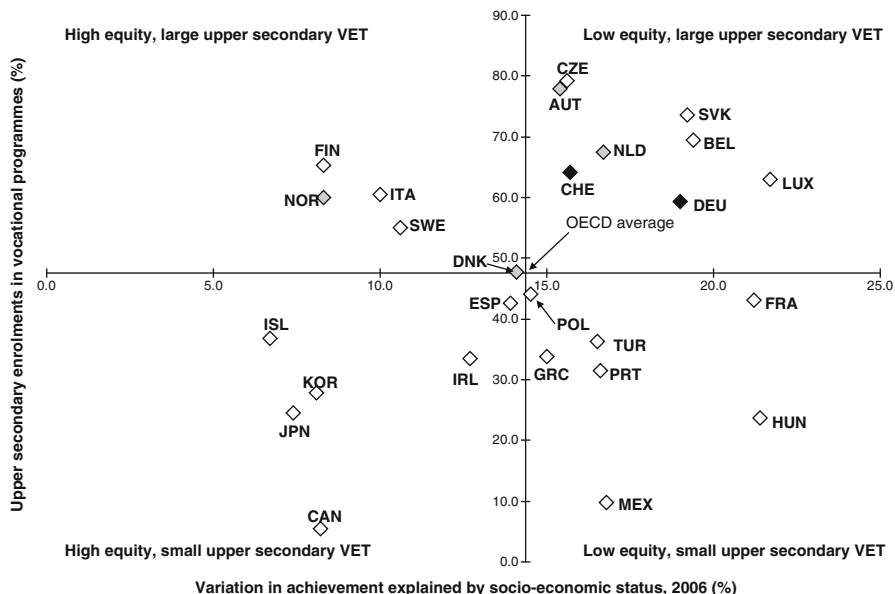
**Fig. 4.2** Streaming of 15-year-olds by achievement and socio-economic status, 2006 (Annex shows the country codes used in Figs. 4.2, 4.3, and 4.4) (Source: OECD (2008b), Table 4.1a)

with a substantial apprenticeship system do more than three-quarters of all 15-year-olds aspire to enter tertiary education, and generally, this figure is half or less.

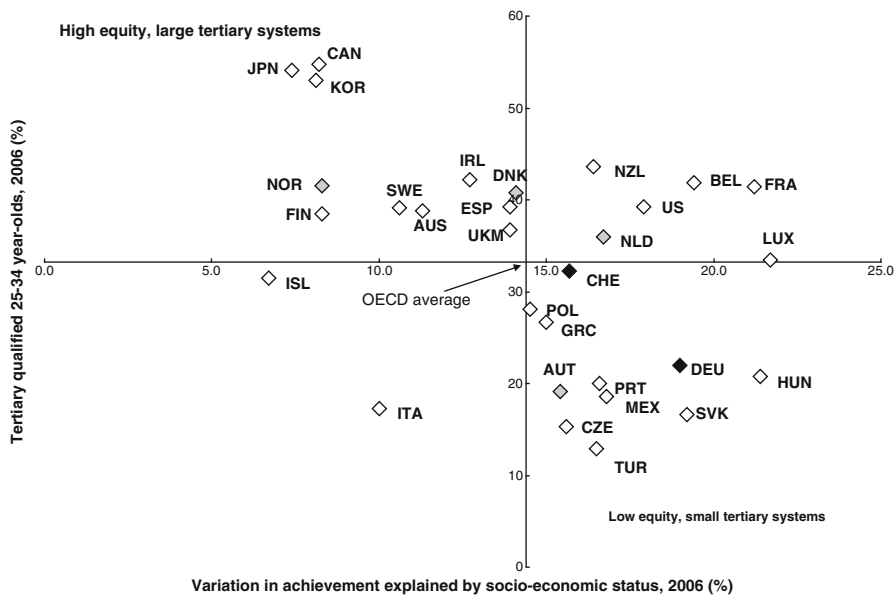
Differences in countries’ characteristic post-compulsory pathways are also related to national differences in equity structures. This can be illustrated using two sets of data. Drawing upon PISA 2006 data on science achievement, Fig. 4.2 shows the extent to which 15-year-olds in OECD countries are streamed into schools by achievement level and by socio-economic status. The Y axis shows the level of between-school (as opposed to within-school) variation in science performance. This is an indication of the extent to which high and low achievers are clustered in different schools. The X axis shows the proportion of the between-school variance in performance that can be explained by an index of family socio-economic status. This is an indication of the extent to which students from wealthy and poor backgrounds are clustered in different schools.

Germany and Switzerland, both of which have large apprenticeship pathways, and Austria, which has a medium-sized apprenticeship pathway, each fall in the quadrant characterised by a school system in which streaming is high both by achievement level and by family socio-economic status. In the Netherlands, which like Austria has a medium-sized apprenticeship system, streaming is high by achievement, but not as strong by socio-economic status. On the other hand in Norway and Denmark, which have medium-sized apprenticeship systems, streaming is low both by achievement and by socio-economic status.

Figures 4.3 and 4.4 show a more direct relationship between equity and the size of post-compulsory pathways. Figure 4.3 shows the relationship between the



**Fig. 4.3** Equity and the size of upper secondary vocational pathways, 2006 (*Annex* shows the country codes used in Figs. 4.1 and 4.2) (Sources: OECD PISA 2006 database and *Education at a Glance* 2008)



**Fig. 4.4** Equity and the size of tertiary pathways, 2006 (Sources: OECD PISA 2006 database and *Education at a Glance* 2008)

proportion of upper secondary students who are in vocational programmes and the proportion of the variance in student achievement on the PISA 2006 science scale that can be explained by an index of family socio-economic status. The top right-hand quadrant shows a group of countries in which equity is low, with family economic resources having a high impact upon performance and where vocational pathways are large. This group includes Germany, Switzerland, Austria and the Netherlands. The countries in this quadrant also tend to be characterised by quite early streaming within the education system.

The top left-hand quadrant contains a group of countries such as Finland, Norway and Sweden in which vocational pathways are also relatively large but in which the impact of family background or socio-economic status upon achievement is much lower. All are countries in which the first point of tracking within the school system occurs at a later age – generally 16 – than is generally the case in countries in the top right quadrant. In the countries in the bottom left-hand quadrant, family background has a low impact upon achievement, and vocational pathways include relatively few youth. Among them are Canada, Japan, Korea and Iceland.

Figure 4.4 relates the same equity indicator used in Figs. 4.2 and 4.3 to the proportion of 25–34-year-olds who have attained a tertiary qualification. It gives a similar message: countries with small tertiary education systems tend to be those where vocational pathways, including both apprenticeship pathways and school-based vocational pathways, are large, where early class- and ability-based differentiation occurs within the school system and where equity is low. The largest tertiary systems tend to be found in countries where equity is high.

## Career Guidance and Pathways

The OECD (2000) has identified career guidance as one of the key features of effective transition systems. As implied in the above discussion, it is one of the institutional factors that can help to determine the character, quality and effectiveness of post-compulsory pathways. International interest in the link between career guidance and public policy objectives – particularly those that relate to lifelong learning, active labour market policies and equity – has been growing rapidly in recent years, largely as an outcome of major reviews of national career guidance policies conducted by the OECD, agencies of the European Union and the World Bank (OECD 2004; Sultana 2004; Watts and Fretwell 2004). One consequence of this rising interest by policy makers has been an improvement in the evidence base that can help us to understand how career guidance relates to public policy objectives. Much of this evidence has been qualitative and descriptive in nature. However, quantitative data is increasingly becoming available, and it is available in data sets that allow career guidance questions to be related to variables such as student achievement and socio-economic status that are important for policy purposes. In my own country, for example, items relating to career guidance have been included in the surveys developed for the major Australian longitudinal

studies of youth in transition (Rothman and Hillman 2008). At the international level, the inclusion of items referring to career guidance in the PISA 2006 school questionnaire has provided an opportunity to gain a comparative perspective on career guidance issues.<sup>3</sup>

The data on career guidance provided by PISA 2006 does have limitations, and it is important to be realistic about these. Career guidance was not defined in the school questionnaire and so could encompass widely different programmes and activities; it was gathered from school principals rather than from students themselves and therefore cannot say anything about variation in access and provision within schools,<sup>4</sup> and it has been gathered from 15-year-olds and thus cannot say anything about career guidance provision in the post-compulsory years.<sup>5</sup> Nevertheless it is a substantial improvement on the quality and availability of comparative career guidance data that had existed previously, and it has the potential to greatly increase our understanding of comparative issues in career guidance provision.

Here, the main question of interest is whether the existence of a large or medium-sized national apprenticeship pathway seems to be related to:

- Whether or not career guidance is provided
- Who is more likely to be provided with career guidance
- How career guidance is provided

### *Provision Levels*

Figure 4.5 shows the proportion of schools in which career guidance is formally scheduled into students' time rather than being voluntary. There does not appear to be a systematic relationship between this and the existence of substantial apprenticeship systems. Nor does it seem to be systematically related to the size of countries' post-compulsory vocational education pathway. In Austria and Germany, only around half of all schools formally schedule career guidance, which is relatively low compared to other OECD countries. On the other hand in Denmark, Norway and the Netherlands, 80% or more of schools make career guidance compulsory, as do around 70% of schools in Switzerland.

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<sup>3</sup>Question 23 asks about participation in job fairs, lectures by business representatives and visits to local businesses; Question 28 asks who is responsible for career guidance in the school (e.g. all teachers or specific career guidance counsellors); and Question 29 asks whether career guidance is voluntary or formally scheduled into students' time at school.

<sup>4</sup>This is likely to be a greater limitation in countries such as Denmark where between-school variation in achievement is small than in countries such as Germany where between-school variation in performance is large.

<sup>5</sup>This will be a greater limitation in countries where schooling does not start to become differentiated until the age of 16 or later than in countries such as Germany and Austria where differentiation begins at an early age.

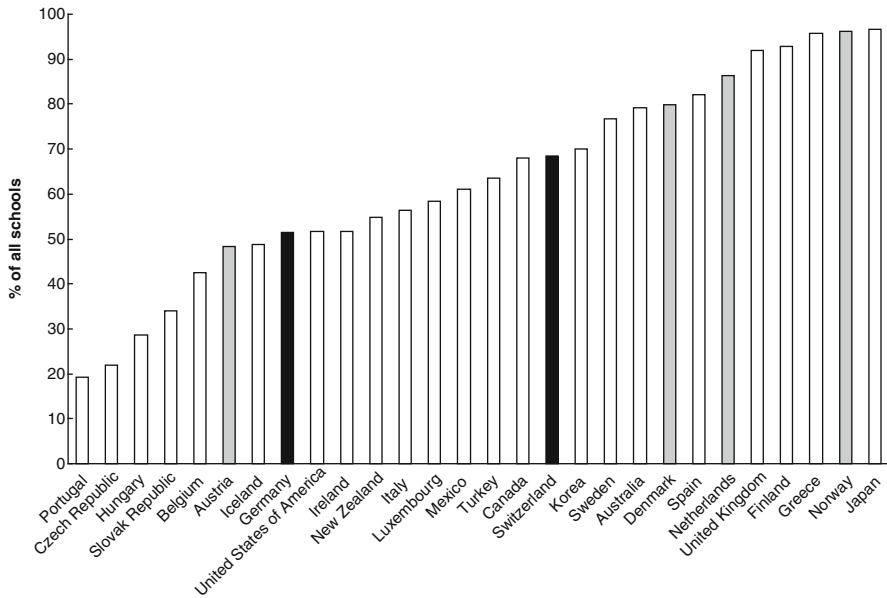
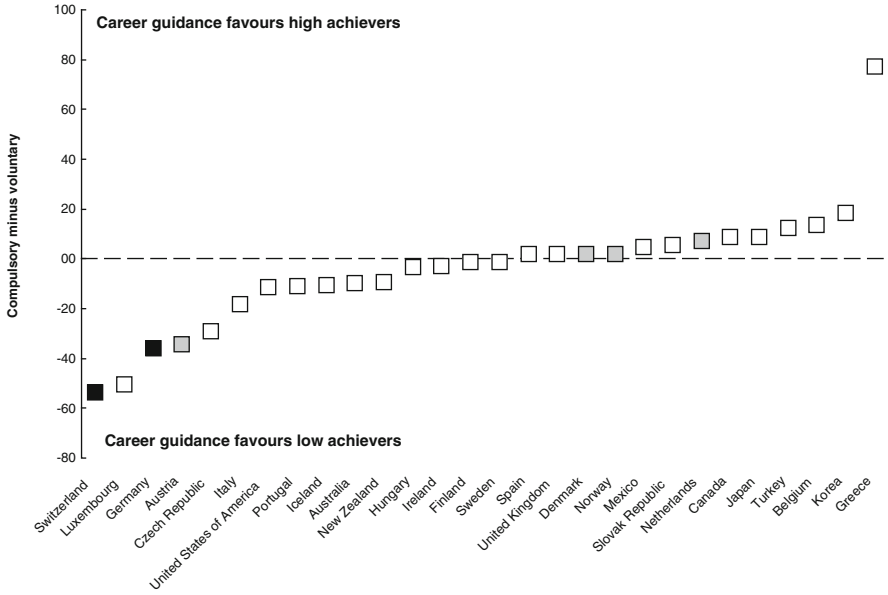


Fig. 4.5 Schools in which career guidance is compulsory, 2006 (%) (Source: PISA 2006 database)

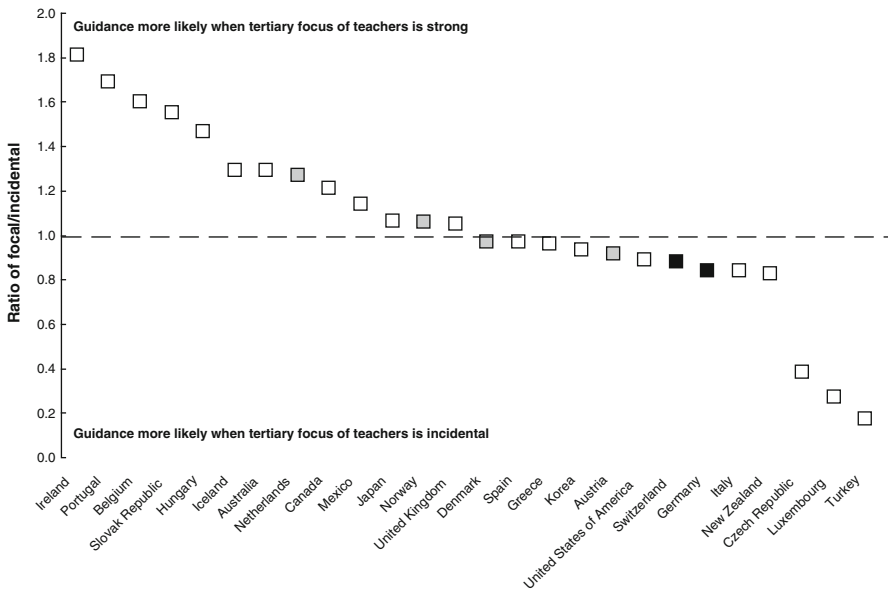
### *Who Is More Likely to Be Provided with Career Guidance?*

Although it is not possible to use PISA data to look at levels of career guidance provision within schools, it is possible to look at some of the characteristics of schools in which career guidance is compulsory rather than voluntary. Given the previous discussion of pathways, two key school characteristics that are assessed in PISA are relevant. These are the average achievement level of a school's students and the extent to which teachers in the school concentrate upon developing in students the knowledge and skills that will help them in tertiary education. Schools in which the average achievement level of students is low are likely to be those in which students who enter vocational pathways are concentrated; schools in which teachers see tertiary-related knowledge and skills as focal to their work rather than incidental are likely to be those in which students in or headed for general education pathways are concentrated.

Both sets of data suggest that in countries with large apprenticeship systems, career guidance for 15-year-olds is more heavily focused upon low achievers likely to enter vocational pathways than it is upon high achievers likely to enter general education tracks. In Switzerland, Germany and Austria, the average achievement level of students in schools where career guidance is compulsory is substantially lower than in schools where it is voluntary (Fig. 4.6). In Switzerland, Austria and Germany, career guidance is more likely to be provided when teachers' focus upon tertiary knowledge and skills is incidental and less likely to be provided when these are a central focus of their work (Fig. 4.7). In Denmark and Norway, however, career



**Fig. 4.6** Difference between mean science achievement scores in schools where career guidance is compulsory and schools where it is voluntary (Source: PISA 2006 database)



**Fig. 4.7** Teachers' tertiary focus and career guidance provision (Source: PISA 2006 database)

guidance provision is more likely to be neutral with respect to both the average achievement level of students or teachers' concentration upon tertiary knowledge and skills.

## How Is Career Guidance Provided?

International reviews (see, e.g. OECD 2004) indicate that where career guidance is infused throughout the curriculum and made the responsibility of all teachers rather than being provided by specialist staff, whether teachers or career guidance counsellors, provision can be patchy, that at times this model can be adopted to suit teachers rather than student needs (as in Austria) and that it requires strong leadership and coordination if it is to work. The provision of career guidance by external specialist career counsellors can risk guidance being disconnected from the curriculum but brings as a strength an increased connection to the realities of the labour market. External services also have the advantage of being more likely to be impartial and independent of the self-interest of the school. International reviews also indicate that best practice in career guidance for youth is characterised by the involvement of people external to the school such as employers and by the provision of opportunities for experiential learning, either inside or outside of the school. Each of these aspects of career guidance provision can be examined using PISA 2006 data.

Table 4.2 shows the proportion of schools that report that career guidance is either not provided or provided by all teachers, provided by specific teachers or specific career guidance counsellors employed by the school or provided by visiting career guidance counsellors. It shows that in Austria and Switzerland, career guidance is more likely than in many other OECD countries either not to be provided or to be provided by all teachers, but that this is not the case in other countries with large or reasonably large apprenticeship systems. In both Switzerland and Germany, specific teachers or counsellors are less likely to be employed to provide career guidance, and in Denmark and Austria somewhat less so. In Switzerland, Germany and Denmark, career guidance is substantially more likely than in most other countries to be provided by an external service.

The PISA 2006 school questionnaire contains three items that examine the extent to which people external to the school and experiential learning are part of schools' careers work. These are the frequency<sup>6</sup> of student participation as a normal part of schooling in job fairs, lectures at school by business or industry representatives and visits to local businesses or industries. Using these items, a composite index has been constructed with a range from zero (which would represent no external or experiential involvement) to 100 (which would represent all students participating

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<sup>6</sup>On a scale of Never, Once a year and More than once a year.

**Table 4.2** Responsibility for providing guidance (per cent of all schools), 2006

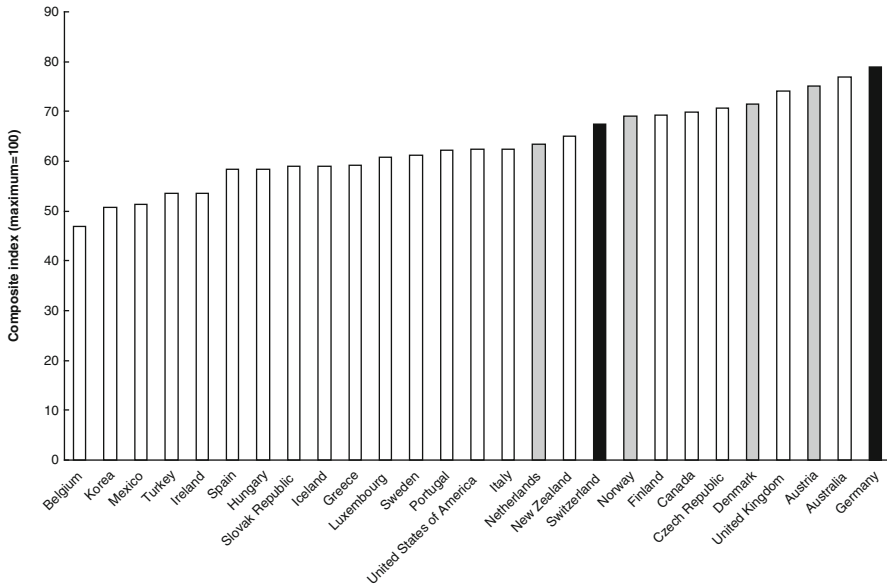
	No guidance is provided or all teachers are responsible	Specific school teachers or counselors are employed	Visiting counselors provide it
Australia	2.8	92.5	0.8
Austria	35.8	57.2	a
Belgium	65.4	19.1	9.5
Canada	8.1	80.5	2.4
Czech Rep.	5.7	88.8	2.3
Denmark	1.0	51.5	45.7
Finland	0.0	97.8	m
Germany	8.0	43.7	27.2
Greece	47.6	46.0	3.4
Hungary	50.2	43.5	1.8
Iceland	9.5	81.6	4.4
Ireland	3.6	91.4	a
Italy	43.3	51.0	0.8
Japan	37.7	61.5	m
Korea	70.9	22.6	3.8
Luxembourg	15.6	77.7	a
Mexico	45.6	45.0	1.2
Netherlands	9.1	73.4	8.9
New Zealand	3.1	90.4	m
Norway	3.6	92.9	0.2
Portugal	9.7	80.1	7.8
Slovak Rep.	15.1	84.4	a
Spain	4.6	90.4	0.4
Sweden	1.3	88.8	8.4
Switzerland	32.9	35.4	15.3
United Kingdom	1.3	50.1	40.7
United States	17.1	76.4	1.3

Source: PISA 2006 database *m* missing, *a* values contained in another cell

in each type of activity more than once a year). This index is shown in Fig. 4.8. Although a strong external and experiential focus in school careers guidance programmes is not exclusive to countries that have strong apprenticeship pathways, it does seem as if this is characteristic of nearly all such countries.

## Discussion

Part of the rationale for career guidance as a publicly funded activity rests upon the role that impartial information and advice can play in helping to ensure that people make decisions that maximise the ways in which talent is allocated in society. It also



**Fig. 4.8** External and experiential focus of schools' careers programme (Source: PISA 2006 database)

rests upon the importance on equity grounds of ensuring that the disadvantaged, those who are information poor and those who lack social capital in the form of networks and contacts, can receive advice, information and guidance that will open up opportunities that otherwise might be constrained by social background (OECD 2004). The dominant ideologies of career guidance practitioners also support practices based upon self-actualisation and the maximisation of potential rather than social control and support for existing inequalities (Watts 1996). On both grounds, career guidance which is relatively neutral with respect to post-compulsory pathways would be expected.

The large apprenticeship systems of Germany and Switzerland are underpinned by streaming at an early age into tracks that lead to large vocational education pathways and small tertiary education pathways. This streaming is strongly based upon achievement and social class and results in a very small proportion of young people, compared to other OECD countries, aspiring to tertiary study by the age of 15. On the other hand, the somewhat smaller apprenticeship systems of Denmark and Norway are built upon school systems that remain relatively undifferentiated, whether by achievement, social class or eventual pathway, until the age of 16. They are associated with somewhat higher tertiary aspirations by young people, somewhat smaller post-compulsory vocational pathways and somewhat larger tertiary pathways. These differences can be shown to be associated with higher rates of intergenerational mobility in Denmark and Norway than in Germany

(Blanden et al. 2005). Austria and the Netherlands, whose apprenticeship systems are roughly comparable in size to that of Denmark, tend to fall somewhere between these extremes.

There appears to be no systematic relationship between the size either of national post-compulsory pathways or the size of apprenticeship pathways on the one hand and the extent to which 15-year-olds receive career guidance on the other. However, the character of career guidance does seem somewhat different in countries that have large or medium-sized apprenticeship systems, with a somewhat stronger emphasis upon external support, experiential learning and labour market relevance.

Furthermore, career guidance provision does seem to differ in its targeting and in its character as a function of the relationship between equity and post-compulsory pathways, although the extent of these differences should not be exaggerated. In Switzerland, Germany and Austria, career guidance at the age of 15 appears to be far more heavily focused upon low achievers than is the case in other OECD countries. This can also be observed in Luxembourg and the Czech Republic, which are also characterised by large vocational education systems, early differentiation within the school system and strong inverse relationships between equity and vocational pathways. On the other hand in Denmark and Norway, differences in career guidance provision at the age of 15 as a function of the achievement level or tertiary orientation of the school are not apparent.<sup>7</sup>

These differences raise questions about whether career guidance is a necessary or simply an incidental underpinning of the relationship that exists in these countries between pathways and equity and of the role that it might play in shaping rather than widening aspirations.

## Annex: Country Codes Used in Figures

Code	Country	Code	Country	Code	Country
AUS	Australia	FRA	France	NLD	Netherlands
AUT	Austria	GRC	Greece	NOR	Norway
BEL	Belgium	HUN	Hungary	NZL	New Zealand
CAN	Canada	IRE	Ireland	POL	Poland
CHE	Switzerland	ISL	Iceland	PRT	Portugal
CZE	Czech Rep.	ITA	Italy	SVK	Slovak Rep.
DEU	Germany	JPN	Japan	SWE	Sweden
DNK	Denmark	KOR	Korea	TUR	Turkey
ESP	Spain	LUX	Luxembourg	UKM	United Kingdom
FIN	Finland	MEX	Mexico		

<sup>7</sup>This does not, of course, preclude differences in provision existing within schools.

## References

- Blanden, J., Gregg, P., & Machin, S. (2005). *Intergenerational mobility in Europe and North America*. London: Centre for Economic Performance, London School of Economics.
- Carnoy, M. (2009). *VET in the new global economy*. Presented at an interdisciplinary congress on research in vocational education and training, Bern. <http://www.ehb-schweiz.ch/en/researchanddevelopment/vet2009/Pages/default.aspx>
- Field, J., & Dubchair, M. (2001). Recreating apprenticeship: Lessons from the Irish standards-based model. *Journal of Vocational Education and Training*, 53(2), 247–262.
- Hartkamp, J., & Rutjes, H. (2001). *Apprenticeship in Ireland, the Netherlands and Scotland: Comparison of trends* (TSER Working Papers). Amsterdam: DESAN.
- Jeong, J. (1995). The failure of recent state vocational training policies in Korea from a comparative perspective. *British Journal of Industrial Relations*, 33(2), 237–252.
- McKenzie, P. (2002). Pathways for youth in Australia. In G. Burke & J. Reuling (Eds.), *Vocational training and lifelong learning in Australia and Germany*. Adelaide: National Centre for Vocational Education Research.
- O'Connor, L. (2006). Meeting skill needs of a buoyant economy: apprenticeship – The Irish experience. *Journal of Vocational Education and Training*, 58(1), 31–46.
- O'Connor, L., & Harvey, N. (2001). Apprenticeship training in Ireland: from time-served to standards based: Potential and limitations for the construction industry. *Journal of European Industrial Training*, 25(6), 332–342.
- OECD. (1998). *Thematic review of the transition from initial education to working life*. Norway/Paris: Country Note.
- OECD. (1999a). *Thematic review of the transition from initial education to working life*. United States of America/Paris: Country Note.
- OECD. (1999b). *Thematic review of the transition from initial education to working life*. Sweden/Paris: Country Note.
- OECD. (2000). *From initial education to working life: Making the transition work*. Paris: OECD.
- OECD. (2004). *Career guidance and public policy: Bridging the gap*. Paris: OECD.
- OECD. (2008a). *VET in PISA: Results from PISA 2003 and 2006* (EDU/EDPC/CERI(2008)5). Paris: OECD.
- OECD. (2008b). *PISA 2006 Volume 2: Data*. Paris: OECD.
- Payne, J. (2002). Reconstructing apprenticeship in the twenty-first century: Lessons from Norway and the UK. *Research Papers in Education*, 17(3), 261–292.
- Polesel, J. (2006). Reform and reaction: Creating new education and training structures in Italy. *Comparative Education*, 42(4), 549–562.
- Quintini, G., & Martin, S. (2006). *Starting well or losing their way? The position of youth in the labour market in OECD countries* (OECD Social, Employment and Migration Working Papers, No. 39). Paris: OECD.
- Raffe, D. (1994). Compulsory education and what then? Signals, choices and pathways. In OECD (1994). *Vocational education and training for youth: Towards coherent policy and practice*, Paris: OECD
- Raffe, D. (1998). Where are pathways going? Conceptual and methodological lessons from the pathways study. In OECD (1998), *Pathways and participation in vocational and technical education and training*, Paris: OECD
- Raffe, D. (2003). Pathways linking education and work: A review of concepts, research and policy debates. *Journal of Youth Studies*, 6(1), 3–19.
- Raffe, D. (2008) The concept of transition system. *Journal of Education and Work*, 21(4), 277–296.
- Rothman, S., & Hillman, K. (2008). *Career advice in Australian secondary schools: Use and usefulness, longitudinal surveys of Australian Youth Research Report 53*. Melbourne: Australian Council for Educational Research.
- Ryan, P. (2000). The institutional requirements of apprenticeship: Evidence from smaller EU countries. *International Journal of Training and Development*, 4(1), 42–65.

- Sultana, R. G. (2004). *Guidance policies in the knowledge society: Trends, challenges and responses across Europe*. Thessaloniki: CEDEFOP.
- Sweet, R. (2009). *Work-based learning programmes for young people in the Mediterranean region*. Turin: European Training Foundation.
- Watts, A. G. (1996). Socio-political ideologies in guidance. In A. G. Watts et al. (Eds.), *Rethinking careers education and guidance: Theory, policy and practice* (pp. 351–365). London: Routledge.
- Watts, A. G., & Fretwell, D. (2004). *Public policies for career development: Policy strategies for designing career information and guidance systems in middle-income and transition economies*. Washington, DC: World Bank.

# Chapter 5

## No Choice – No Guidance? The Rising Demand for Career Guidance in EU Neighbouring Countries and Its Potential Implications for Apprenticeships

Helmut Zelloth

### Apprenticeships and Career Guidance

Plenty of research findings confirm that apprenticeships as the oldest type of vocational education and training have experienced a revival in recent years (Rauner and Smith 2009). This international trend has also affected a number of low- and middle-income countries neighbouring to the EU, though to a different extent; for example, in Northern Africa and the Middle East (Morocco, Tunisia, Algeria, Lebanon, Egypt), in Eastern European and Central Asian countries (i.e. Ukraine, Kazakhstan) and in candidate countries (i.e. Turkey, Croatia) or potential candidate countries to the EU (i.e. Albania), a similar trend can be observed (Zelloth 2010a). In parallel, in most of these countries also career guidance services are being introduced or further shaped where they already exist. However, the relationship between the two parallel phenomena of expansion of apprenticeships and career guidance still needs to be researched. While this chapter attempts some reflections on this relationship, it mainly looks at the overall demand for career guidance as well as at the obstacles and reasons why career guidance services are still largely underdeveloped in many countries. It reveals that the level of policy profile varies between countries and that a distinction can be made between ‘donor-driven’ and ‘home-grown’ developmental patterns. The most frequent delivery models being adopted are the ‘centre model’ and the individual specialist model, whereas the ‘curriculum model’ and ‘virtual model’ are under-represented. The delivery method is often psychological oriented, but a more pedagogical and labour market-oriented mode is gaining ground.

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## Methodology

This chapter is based on research by the author (Zelloth 2009) which had covered a sample of nine low- and middle-income countries neighbouring to the European Union (Egypt, Georgia, Ukraine, Montenegro, former Yugoslav Republic of Macedonia, Turkey, Albania, Jordan, Russia). In the majority of these countries, a questionnaire developed and administered by the author in field visits was applied during interviews with policymakers and practitioners in career guidance from both the education and employment sectors. This chapter additionally draws on information and analysis provided by 28 country reviews and three major comparative analyses undertaken by the ETF: a cross-country analysis of career guidance policies in 11 acceding and candidate countries (Sultana 2003), in 7 Western Balkan countries (Sweet 2006) and in 10 Mediterranean (MEDA) countries/territories (Sultana and Watts 2007). It also takes into account information from policy papers (Akkok and Zelloth 2009; Zelloth 2008, 2010b, 2011) the author prepared for several Governments (i.e. Serbia, Kosovo, Turkey and Jordan) and from reflected experience in working with countries neighbouring the EU.

## State-of-the-Art Definition and Distinction from Other Concepts

The chapter relies on the international definition of career guidance as covering services (career information, guidance and counselling) intended to assist people of any age and at any point in their lives, to make education, training and occupational choices and to manage their careers (OECD 2004; European Union Council 2004, 2008; ILO 2006). For the sake of analysis, it is important to distinguish career guidance from other related concepts and processes, which are different although partly overlapping, such as (a) induction (supporting entrants in managing their transition into a new learning or work environment), (b) promotion (attempting to persuade individuals to make particular choices at the expense of others, e.g. vocational education and apprenticeship), (c) selection (making decisions about individuals) and (d) placement (matching individuals to specific jobs).

While some of these concepts are primarily designed to serve the interests of opportunity providers (education and training institutions and employers), career guidance by contrast is addressed specifically to the interests of individuals within their social context (Sultana and Watts 2007). It is concerned with helping individuals to choose between the full range of available opportunities, in relation to optimally utilising their abilities and addressing their interests and values, and thereby leading to better performance, greater fulfilment and satisfaction.

## **In Demand but Not Yet Sufficiently There: Career Guidance in EU Neighbouring Countries**

### ***Career Guidance Is Moving Up the Policy Agenda***

Despite that career guidance hardly was a policy priority in the education and employment agendas in the past, there are clear indications that it is moving up the policy agenda in the last decade and that guidance services are developing in many countries neighbouring to the EU. This phenomenon takes place in the Mediterranean region, such as Egypt, Jordan, Syria, Morocco and the occupied Palestinian territory, in countries in the Western Balkans and Southeast European area (Serbia, Montenegro, Kosovo, Turkey), as well as in countries of the former Soviet Union (e.g. Ukraine, Georgia, Azerbaijan). The reasons for this trend are manifold and can be largely explained by economic and labour market developments, as a result of ongoing education and training reforms and by other policy-induced drivers, such as the increasing awareness of and involvement in EU employment education/training policies. The latter argument is particularly relevant for candidate and potential candidate countries to the EU.

### ***The Level of Policy Profile Varies Across Countries***

Until quite recently, in a group of countries (Albania, Georgia, Egypt, Syria, occupied Palestinian territory, Azerbaijan), career guidance has not been on the policy agenda at all. This ‘policy absenteeism’ in career guidance is now being gradually replaced by a remedial policy model or in some cases even by a first comprehensive strategic approach (‘embryonic policy profile’).

Other countries, such as the former Yugoslav Republic of Macedonia, Croatia, Lebanon or Jordan, had some policies on career guidance in place, but they tended to be rhetorical, fragmented and not to be significantly enforced (‘low-policy-profile’ countries). In another group of countries (e.g. Turkey, Serbia, Montenegro, Kosovo, Ukraine, Morocco), career guidance has been featuring high on the policy agenda already for some time, and in some cases, policies have been recently reinforced, or implementation is characterised by action plans, innovative approaches or large-scale projects (‘high-policy-profile’ countries).

### ***Strategic Policy Frameworks Are Emerging***

In the last years, a couple of countries have been preparing policy frameworks for career guidance as a response to specific challenges of education and labour market

reforms. Countries aspiring to join the EU were to a certain extent also influenced by new lifelong learning policies and the general ambition to comply with the body of EU policies, including on lifelong guidance. Kosovo has approved an ambitious 10-year career guidance strategy (2006–2015), initiated by the three major ministries involved in guidance (Ministry of Education, Science and Technology, Ministry of Labour and Social Welfare and Ministry of Culture, Youth and Sports).

The strategy views career guidance as an essential component of lifelong learning and aims to establish all-age guidance services for Kosovo in the long term. As part of this strategy, a curriculum framework for career education concerning the grades 6–13 has been prepared. In 2010, Serbia has adopted a comprehensive career guidance policy framework, titled National Career Guidance and Counseling Strategy, along with a detailed action plan covering the period 2010–2014. Montenegro followed a similar path in 2011, and in the same year in Jordan, the Employment, Technical and Vocational Education and Training (E-TVET) Council has adopted a career guidance strategy for the period 2011–2014.

Some countries have started to prepare similar policy frameworks for career guidance but did not yet reach the stage of approval or implementation (Egypt, occupied Palestinian territory), while others opted for introducing references to career guidance in specific legislation (e.g. Georgia in the VET Law 2007) or sector policies (in Lebanon as part of the priorities in the National Education Strategy). However, in many countries, implementation of career guidance practice is far lagging behind policy development, or it is still at a too early stage that outcomes can be assessed.

### ***Policy Coordination Is Increasingly Viewed as Essential***

Policy coordination within the education sector as well as at cross-sector level between education and the labour and employment administration remains a challenge (Sweet 2006). As a result of a ‘segmented’ approach to policymaking in career guidance, nearly all countries have developed separate structures in the education and employment sectors, with policies and operations not effectively coordinated. This ‘fault line’ that divides the career development field like a ‘tectonic plate’ (Fretwell and Plant 2001) seems to be true for the vast majority of EU neighbouring countries, irrespective of their size.

Some countries acknowledge this problem and attempted to find policy responses by developing coordination mechanisms, others not yet. In Ukraine, for example, the vice prime minister has issued a special edict on guidance in 2007, in which the Ministries concerned, key stakeholders, providers and universities were called to improve synergies, cooperation and coordination in career guidance. In Morocco, coordination between different ministries has been regulated by a ministerial note, though the process tends to be top heavy and bureaucratic (Sultana and Watts 2007). Egypt has created a ‘Voluntary National Task Force’ on career guidance in 2007, initiated jointly by the Ministry of Education and the Ministry of Manpower and

Migration, in order to prepare a concept paper and strategic document on career guidance (Badawi et al. 2008). This task force broadened its membership to other ministries and stakeholders in 2009.

Kosovo has set up a national policy forum in 2006, based on a memorandum of understanding signed by the three line ministries. The composition of this policy forum is somewhat remarkable, as it managed to get high-level officials committed to be members of this body (directors/head of departments from three ministries and few other stakeholders). In Turkey, the Ministries of National Education, Labour and Social Security, the public employment services and social partners, as well as the State Planning Agency, the Higher Education Board and statistical institute, have agreed on a renewed 'Protocol for Cooperation in Career Information, Guidance and Counseling Services' in 2004, which was further specified in a new 'Memorandum of Understanding' in 2009. The Serbian government has assigned the coordination role related to the career guidance strategy and its implementation to a new ministry, the Ministry of Youth and Sport, while Jordan is planning to establish a career guidance implementation unit funded under the umbrella of the E-TVET Council. Thus, a great variety of cooperation and coordination mechanisms can be found in EU neighbouring countries; however, not all of them are fully operational or sustained solutions. What often is needed is a clear strategic leadership, capacities assigned for cooperation and mutual trust in order to become a successful approach.

## **The Context of Demand for Career Guidance**

The issue of demand for career guidance services in EU neighbouring countries – as well as other low- and middle-income countries (Watts and Fretwell 2004) – is not well researched. In general, direct empirical evidence of demand is either lacking or too weak to support an approach called 'evidence-based policymaking'. For the majority of countries, in particular the smaller states, this has to be seen in a wider context where science and research are largely carried out under modest conditions and with minimum funding. Consequently, overall research in education, training and labour market institutions is very limited. Some research on career guidance that can be found in larger countries (i.e. in Ukraine within the Academy of Pedagogical Sciences) are often focused on supply issues and its research results tend to remain rather institutionally isolated and not linked to policymaking or being used by it.

### ***Empirical Evidence of Demand for Career Guidance***

A labour market assessment in Turkey revealed amongst the most important challenges identified by youth in the transition from school to work 'the lack of information about job availability' (19% of respondents) and the 'lack of jobs'

(25%). Inadequate or irrelevant school preparation was cited by 43% as the most serious challenge (World Bank 2008). A tracer study in Kosovo revealed that almost 88% of VET graduates were currently not employed in the profession they were trained for but that 92% would like to work most in the same profession for which they were trained. Ninety-three percent intended to change their job as soon as they found something else, and 85% did not make any contact with institutions assisting to find a job (Swisscontact 2008).

One of the few demand-focused surveys was undertaken in Montenegro by the newly established Centre for Career Information and Professional Counseling in 2007. A basic questionnaire on demand for career guidance (sample of 800 primary school students) showed us results that around 1/3 of pupils in the last grade were still undecided on the type of educational progression and around 30% expressed lack of information. A needs assessment survey done in Kosovo (LINK Student Services 2007), based on a random sample of 726 university students, prior to the opening of a student service centre demonstrated that almost 90% of students find it relevant to have a centre at the university giving information and advising on issues regarding not only academic studies but also careers.

### ***Indirect and ‘Non-evidential’ Sources of Demand for Career Guidance***

In view of the weak direct empirical ‘evidence’ of demand for career guidance, potential demand largely needs to be argued and derived ‘indirectly’ from wider development patterns and ‘non-evidential’ sources. A number of drivers of demand can be identified through analysis of the inner logic and development features of the labour market and education systems as well as other contextual specificities of EU neighbouring countries. As the main push and pull factors shaping and fostering the demand for career guidance in these countries, the following can be considered:

### ***Economic Transition and Accelerated Growth***

In many of the EU neighbouring countries (in particular Eastern Europe, Western Balkans), the early phase of transition from planned to market economies was characterised by economic downturn, and labour markets became highly volatile and non-transparent. In the last decade, nearly all the countries have shown higher growth rates and greater economic dynamism compared to EU and OECD countries, and labour demand has been growing to a certain extent. Whereas in the context of early transition the scope for guidance was limited, potential demand has been increasing in the context of more stable and then fast expanding economies. In a few

countries, a direct link between economic development and the raised importance of career guidance on the policy agenda can be observed. In Ukraine, when two major career guidance initiatives ‘failed’ in the mid-1990s, this was explained by local experts and stakeholders as being due to the ‘non-readiness’ of the economy and labour market at that time.

### ***Labour Market Mismatch and Structural Unemployment***

A number of countries show a significant mismatch between demand and supply of the labour force, as one of the factors attributed to high unemployment rates. This is true for the former Yugoslav Republic of Macedonia as acknowledged by its national employment strategy 2010, as well as for Montenegro, where the tourism and construction sectors hire tens of thousands seasonal workers from foreign countries, despite high unemployment. In Egypt, unemployment is increasing and is comparatively high for intermediate and higher qualifications rather than for the low skilled (phenomenon of ‘educated unemployment’), in particular for youth. Ukraine is facing severe labour market supply deficiencies and a major mismatch in terms of ‘undersupply’ of skilled and manual workers in almost all sectors to satisfy the needs of the ‘booming’ economy. One of the traditional functions of career guidance, to contribute to a better ‘matching’ of supply and demand of labour, seems to be especially relevant for the neighbouring countries of the EU.

### ***Growing Emphasis on Preventive Labour Market Policy and Social Inclusion***

Active labour market policies as well as employment services have been traditionally poorly developed in a number of countries but have been gaining ground in recent years. Egypt, with bilateral donor support from Canada (CIDA), has attempted to reform its employment services, for the first time introducing active measures, including guidance. The former Yugoslav Republic of Macedonia has introduced an individual approach (individual action plan) towards the unemployed in 2007, and guidance and training are considered part of it. Montenegro, which has introduced individual action plans already in 2001, fuels demand for career guidance services through specific objectives and targets in the national employment strategy and its action plans, when aiming to increase the number of clients or the accessibility of information, for example. A ‘paradoxical’ exception is Georgia, which abolished public employment services and both active measures and unemployment benefits to the unemployed in 2006.

## ***Modernisation of the Education System and Increasing Diversity and Flexibility of Learning Opportunities***

Changing the structure of the education system by introducing two- or three-tier cycles in traditionally monolithic primary education, as it happened both in Montenegro and the former Yugoslav Republic of Macedonia, can also boost demand for career guidance. So can the introduction of an ‘orientation year’ as in Kosovo, Albania and Turkey. In Egypt, a new study plan for VET was adopted and started its gradual implementation in 2008/2009. It aims to postpone the decision for specialisation in VET from the 1st to the 2nd year, thus creating potential demand for the provision of orientation programmes and other guidance activities. Before, in general secondary education, elective subject matters were introduced in Egypt, and as a result, ‘academic counsellors’ were appointed to assist students in selecting the academic subjects that would match their career aspirations (Badawi 2006). In principle, this initiative can be considered an example of response to a demand created by education reform. However, in reality, these counsellors never became fully operational because both framework conditions to support implementation and a critical mass of well-trained career guidance practitioners were lacking.

In Ukraine, similar demand can be detected as secondary education has been extended from 11 to 12 years (the first school leavers of the 12th year will graduate in 2013), and the Confederation of Employers has started to promote a system of flexible and short-term labour market-oriented VET. In Montenegro, policymakers are thinking about making secondary education compulsory and VET more modular on the midterm.

### ***Policies to Reduce Dropout***

Preventing wrong choices and reducing or eliminating the number of dropouts at various stages of the education system, with a view to minimise the ‘waste’ or wrong use of educational investments, is one of the functions career guidance can contribute to in principle. The former Yugoslav Republic of Macedonia had a comparatively high dropout rate during primary education and at the stage of transition from primary to secondary schools, with a substantial number of pupils not continuing education, thus ‘reproducing’ the low educational level of the population. In Kosovo, dropout levels are known to be very high too, particularly in upper secondary education (ETF 2008).

### ***Push Factors from the Supply Side***

The supply-driven introduction of (pilot) career guidance services, if successfully implemented, can have the effect of stimulating and fuelling further demand for

guidance. For example, the establishment of ‘career centres’ in some VET schools in the former Yugoslav Republic of Macedonia has further stimulated demand in other VET schools (meanwhile, all 57 schools established such centres) and could trigger higher demand beyond students of VET schools, for example, students in gymnasia, which are often located in the same building as VET schools. In the long term – and in combination with the new two- or three-tier primary education cycles – this could also place peer pressure on primary education to start or enhance its provision of services. Much the same might happen in Georgia, with the recent introduction of career managers and consultants in VET centres. In Kosovo, the piloting of career education in the 9th grade (‘orientation year’) in 2008 has triggered off additional demand by other classes located in the same 35 schools in which the pilot took place. Due to this strong demand, the question is, however, if sufficient capacities for career guidance can be built in the short- or midterm. A severe limitation is that a career guidance profession practically does not yet exist in the country and that sound training schemes for teachers who got assigned a career guidance function still need to be further developed.

In Montenegro, there are signs that the foundation of a CIPS (Centre for Information and Professional Counselling) in the capital of Montenegro (Podgorica) has created further demand in the regions, via information, surveys and awareness rising on the topic. This new demand is currently being addressed through a project supported by the EU.

### ***Policy-Induced Drivers of Demand***

Other drivers seem to steer additional demand and supply for career guidance, such as ‘policy beliefs’ (e.g. it is believed or hoped that career guidance contributes to increase employability and educational efficiency), ‘intuitive policy statements’ and ‘policy activism’ (e.g. ‘It is the right time now to start with career guidance’). These phenomena can be observed in some countries. The EU integration process functions in particular for candidate countries but also for potential candidates, as an important driver of demand. Through gradually increasing involvement in the EU policy developments in employment and education, but also through the attitude of policymakers to anticipate EU expectations and demand in the hope of getting earlier to accession, the likelihood is high that some countries will take into account sooner rather than later the EU Council Resolution on Lifelong Guidance of 2004 and the new Council Resolution on ‘Better integrating lifelong guidance into lifelong learning strategies’ adopted by the Ministers of Education of 27 EU member states in 2008.

## **Barriers to Meeting the Demand for Career Guidance**

In parallel to the manifold ‘drivers’ of demand for career guidance as argued above, there need to be considered a number of specific limitations, which tend to undermine the potential demand and effectiveness of current guidance services. Such factors and barriers arise from the different stages of economic development, the nature of labour markets and the countries’ education and training systems as well as sociocultural specificities. They all tend to limit individual choices of students and citizens (no choice – no guidance?). A few of these features can be further elaborated as follows:

### ***High Share of Informal Economy***

A distinctive feature of nearly all countries concerned is the comparatively high share of the informal or ‘shadow’ economy. Estimates of informal employment in Albania, the former Yugoslav Republic of Macedonia and Egypt range between 50 and 55% for each of the countries. The shadow economy in Georgia is estimated to constitute more than 2/3 of the GDP and in Ukraine some 30–50% of total economic activities (Zelloth 2009).

As a result, the official employment rates tend to be very low in a number of countries, limiting the potential scope for career guidance. Moreover, the informal sector by definition does not fall within the conventional purview of formal guidance services. Therefore, in countries with a high share of informal economy, formal guidance services are challenged by and need to consider both the informal labour market and the ‘informal guidance’ provision (often based on ‘social capital’), when shaping formal structures and systems.

### ***Social Capital Versus Human Capital***

As a result of the large share of the ‘informal’ and ‘survival economy’ but also due to different sociocultural features, such as the important role of the family and informal networking in such societies, there are other labour allocation mechanisms involved or even prevalent than those based on merit and performance in order to get access to interesting, well-paid and/or secure jobs and careers.

An earlier ETF study (Sultana and Watts 2007) confirms such features for the Mediterranean region: ‘Whom you know tends to be more important than what you know’. Connections with and through (wider) family, friends and other non-transparent forms are crucial for ‘managing a career’. An extreme case – although not necessarily transferable to other EU neighbouring countries – stems from the before-mentioned tracer study on VET graduates in Kosovo who entered the labour

market. Its results showed that almost everybody in recent employment (97%) got their job through ‘personal relations’ and 50% saw ‘to migrate abroad’ as the best alternative to finding a job (Swisscontact 2008).

### ***Dominance of ‘Informal Guidance’***

Hand in hand with informal labour allocation mechanisms goes the phenomenon of ‘informal guidance’, which is ‘delivered’ through parents, family, friends and other peers. It represents another major obstacle for formal guidance provision to get established or to become more effective. However, the fact that ‘informal’ guidance exists also indicates that there is potential demand for ‘formal’ and professional guidance services. The rationale of ‘informal guidance’ also may be questioned since it often seems to be neither effective from the individual nor from the labour market perspective and may lead to individual disappointment, waste of human resources and fostering labour market mismatch.

### ***Affordability of Career Guidance***

Despite of the fact that most EU neighbouring countries are developing their economies and even showed higher growth rates than the EU in recent years, their economies still remain at a considerably lower developmental level than the EU average. This poses the question of affordability of career guidance as in many countries, overall resources (public and private) are limited, and in the fierce competition for resources, ‘hardware’ investments tend to come first before ‘software’.

The lack of resources is partly compensated by the permanent and sometimes high inflow of funds from multilateral and bilateral donors, including the EU, towards their education and labour market sectors. Some of these funding portions have been allocated to career guidance development, and there is still more potential to un-tap. In principle, low- and middle-income countries will need to embark on cost-efficient approaches, such as putting the emphasis on career information, career education, self-help and web-based approaches. But, if the costs of the ‘wrong choices’ of young people were calculated, these would by far outnumber the magnitude of any investments in career guidance.

### ***‘Shadow’ Education System and Private Tutoring***

In a number of countries, the phenomenon of private tutoring is so enormous that one could almost speak about a ‘shadow education system’. This is particularly true

for Turkey, Egypt and other Mediterranean countries. Estimates show that the large majority of students attend private courses in the evenings or weekends, mainly in order to have higher chances to manage successfully the university entrance exam, which in turn decides about the future careers. In general, this private tutoring system does not only compensate learning which did not take place in schools, but tutoring institutes are particularly specialised to prepare students on those techniques which are required to manage or navigate through the exam and its complicated scoring system. Teachers of private tutoring companies often have an important ‘informal’ or even formal guidance role. It is known from Egypt that even poor families are ready to pay for their kids’ private tutoring out of their last resources.

### ***Academic Orientation and Low Status of Vocational Education and Apprenticeships***

Due to the overall ‘gear’ towards academic and higher education largely steered by prestige, social status, beliefs and often unrealistic expectations, in many countries, VET has been developed into a low-status alternative to higher and general secondary education. For the Mediterranean countries, it was found that the problem of low status for work-based forms of VET can be compounded by segmented VET systems in which work-based programmes lead to lower-level qualifications than do other schemes; for example, in Morocco and Israel, apprenticeships have been designed largely for school dropouts (Sweet and Zelloth 2009).

Negative stereotyping of vocational careers, VET or apprenticeships as well as gender stereotypes poses an additional challenge for career guidance as it tends to keep away young people from pursuing such careers and limits overall choices. Also, the culture of elitism and selectivity or current assessment strategies tends to affect negatively the scope for career guidance, jeopardising the very notion of educational guidance (Sultana and Watts 2007).

### ***Rigid and Inflexible Allocation System in Education***

The current allocation system of students to educational pathways (i.e. Jordan, Egypt) seriously undermines the potential demand for career guidance in schools. According to their final achievement in school, measured solely by grades, students are allocated either to the general secondary education stream, the vocational education stream (for lowest achievers) or to higher education (Mryyan 2006).

In some cases, the grades even predetermine the study field young people can ‘choose’. It is obvious that such a system does not allocate human capital properly and is therefore criticised as ‘unsuccessful’, ‘undemocratic’ and ‘interfering with

students' free will to choose what they want to study' (Prisma Marketing & Communication 2010). As it is likely that the pressure to change and open up this allocation system will increase in the near future, as a result, the potential demand for career guidance can be expected to grow as well (Zelloth 2011).

### ***Historical Legacy***

A specific feature more typical for post-communist EU neighbouring countries is the historical legacy of a dualistic pattern of state (reliance/obedience) versus individual (empowerment), emphasising the first pattern. Individualistic notions as well as the term 'career' were long time regarded as a social vice and might still act as 'mental barriers' against career guidance. Similar experience was identified in new member states of the EU such as Romania or Bulgaria that previously belonged to the 'Eastern bloc' but where historical legacies and negative connotations with the terms 'career guidance' or 'professional orientation' were still present a few years ago (Zelloth et al. 2007).

## **Different Delivery Models of Career Guidance in EU Neighbouring Countries**

### ***Home-Grown Versus Donor-Driven Career Guidance Development***

Apparently, some countries seem to follow a rather 'donor-driven' developmental approach, and other countries more tend to follow a 'home-grown' pattern of career guidance development. To the first group belongs the former Yugoslav Republic of Macedonia, which had received support to career guidance as a component of two subsequent EU-funded VET projects (2000–2003). However, major innovations, amongst them the development of a 'Model for Professional Counseling and Mediation for Employment', did not prove to be sustainable after external funding is finished.

To the group of countries with 'home-grown' pattern of (policy) development would belong Ukraine and Montenegro. Both countries have not been subject of tangible donor support on career guidance in the last decade and have been following their own development paths, drawing at best on some experience from their 'neighbours' (Russia, Slovenia/Serbia). Although the level of ownership might be higher in the home-grown model, its sustainability is not necessarily guaranteed. In Ukraine, for example, career guidance policy has been quite volatile in the last decade, establishing and then abolishing centres in public employment and at university, recently now possibly reintroducing again such centres. Although a

donor-driven approach bears a certain higher risk of non-sustainability as well as of a certain ‘bias’ in ‘policy and practice borrowing’, often shaped by the geographical origin of the donor or the implementing consultants, external funding is highly necessary or even inevitably for most EU neighbouring countries.

In reality, there are a number of examples of sustainable donor-support projects as well as of mixed models where home-grown development is complemented by donor funding (i.e. Turkey).

### ***Different Approaches and Delivery Models of Career Guidance***

The most frequent delivery models being adopted in EU neighbouring countries are the ‘centre model’ (both in educational and labour market settings) and the ‘individual specialist model’. In reality, sometimes two models are combined and the curriculum model seems to be on the rise. Virtual or web-based models are not yet common, and the potential benefit of a semi-specialist model is not yet untapped. Both would offer cost-efficient approaches in a context of scarce resources in low- and middle-income countries Watts and Fretwell 2004.

Regarding the delivery methods, the ‘psychological mode’ appears to be still dominant, but the emerging ‘pedagogical mode’ or a ‘hybrid mode’ gain ground, both being more labour market oriented.

As a preferred method of introducing and gradually developing guidance services, piloting has been used in many countries. The ways how basic development patterns (home-grown versus donor-driven) influence and are interrelated with the different types of models and methods that are being adopted still needs to be further explored.

### ***The ‘Centre’ Model***

In a number of countries, a model is being applied in both educational and labour market settings that could be classified as the ‘centre model’. Hereby, the notion, meaning and magnitude of a ‘centre’ can vary substantially, from a ‘virtual centre’ up to a centre in a classical understanding, staffed with several professionals. For example, in Serbia and in Montenegro, centres for information and professional counselling have been set up in public employment services. One to four psychologist, counsellors and information specialists are there to support visitors with a variety of materials, occupational profiles and tests. In Kosovo, the National Guidance and Resource Centre has no full-time staff but ‘staff-loans’ and temporary staff assignments from three ministries who are rather ‘semi-specialists’. In Jordan, career advisory centres exist at universities and are run by one to several staff, including graduates and students from various backgrounds.

In the former Yugoslav Republic of Macedonia, career centres have been established at vocational schools, but they are ‘unmanned’. There, access to internet and information materials is provided in one room. Students, in cooperation with a teacher or school psychologist, look after the facility and organise career workshops from time to time. In Georgia, the professional cadre of the ‘Information, Job Counseling and Referral Center’ (IJCRC) is composed of a mix of specialists of the labour market and career guidance (labour economists, sociologists and psychologists) who are working in an interdisciplinary approach.

### *The ‘Curriculum’ Model*

A few countries have introduced or started to introduce career education and/or curricular principles related to guidance. The most pronounced example can be found in Turkey, and the most recent developments are taking place in Kosovo and Albania. In Turkey, career guidance is included as part of class guidance programmes in all types of school, integrated with personal and social education. A few years ago, the duration of all secondary education programmes was increased to 4 years, and VET and general secondary education programmes got a common base in the 9th grade (‘orientation year’), allowing for higher flexibility. In this context, an ‘Information and Guidance’ class has been implemented recently (supported by the EU project MEGEP/SVET – Strengthening Vocational Education and Instruction Project) to inform students about the different types of education, occupations, sectors and working life (Akkok 2006). In Kosovo, career education has been introduced as a pilot in the 9th grade (orientation year) in 34 schools all over the country in 2007/2008. This EU-supported initiative was based on an earlier National Curriculum Framework, which referred to career guidance as being relevant for all levels of education (Zelloth 2008). First evaluation results on the career education pilot are promising, and the Ministry of Education and Science has declared to expand this approach. In the Egyptian basic education, a subject matter named ‘Practical fields’ (2 h per week) is part of the education plan and compulsory from grade seven to grade nine. It aims at giving students a glance about fields other than the academic ones and to help them assess their own interest and capabilities as well as knowing about possible work opportunities. However, shortage of qualified teachers for this subject and the fact that many schools work in two daily shifts usually results in using these teaching hours for other purposes and academic classes (Badawi 2006). In Ukraine, ‘labour lessons’, in a separate subject ‘Occupations of Today’ from the 5th grade onwards and continuing from 9th to 11th grade (and 12th grade when the new structure of the school system becomes operational), may contain some elements of career guidance. However, the extent it is being applied in practice is not sufficient. Moreover, it is doubtful if the approach corresponds to a modern concept of empowering the individual by learning ‘career management skills’.

As the curriculum model or ‘career education’ is a relatively new but attractive concept for EU neighbouring countries, it is on the one hand on the rise, but on the other hand, it is too early to assess its impact on students and their future careers.

Like in many other countries, the curriculum model is complemented by other career guidance activities, such as invitations by universities to learn about their study offers and invitations by the public employment services to visit job placement or career fairs.

## **Conclusions and Implications for Apprenticeships**

### ***Demand Outweighs the Barriers***

Overall, the drivers of demand for career guidance seem to outweigh the barriers and factors that speak against career guidance development. However, policymakers and policy designers are well advised to take into account the typical barriers and obstacles when shaping the career guidance services of their country. In particular they need to consider the specificities of the informal labour market (when developing career information) and the phenomenon of informal guidance (involving parents, peers). But they also need to pay more attention to transform policy into practice and to ensure sustainability of pilots and innovation in the system. One effective way is to integrate career guidance within wider reforms in education, VET and labour market as it can make these reforms more effective. For example, an education, VET or apprenticeships reform project could include the development of a career information system and the training of teachers and in-company trainers to include career guidance functions in their roles. Curriculum reform could go hand in hand with the piloting or introduction of career education or career management skills.

At the end, an approach which fosters demand-driven career guidance provision (through more systematic analysis of the real demand for services) instead of supply driven and an approach which aims to fit to the size and sociocultural circumstances of a country will be more likely successful.

### ***A Common Set of Challenges: Access and Change of Delivery Model***

Despite the different stages of development of EU neighbouring countries, they all face a set of common challenges in career guidance policy and practice. Amongst the most prominent ones are (a) to manage a substantial increase in the access to career guidance services for students and young people, in particular at key transition points between educational/training pathways and in the transition from

school to work, and (b) to change the mode of delivery from the traditional psychological model to a rather pedagogical model (or at least ‘hybrid’ one) which takes better into account the labour market in general and its specificities in those countries.

If access levels do not reach a critical mass, it is likely that career guidance services will have little impact on the educational and occupational choices of entire generations of young people. A recent survey, conducted on behalf of City & Guilds (The Guardian 2011), showed that almost one in four young people in England gets no career advice and that this share is even higher for those taking apprenticeships (almost 30%). Despite that empirical research findings are not available for EU neighbouring countries, it is safe to say that access levels in these countries are even much lower. If the mode and models of delivery are not changed or adapted, it is likely that career guidance services will not be as relevant as they could be. This concerns also the policy options whether to choose a specialist solution or to allow as well for semi-specialists to become career guidance practitioners. Findings from an OECD paper (Watts 2009), for example, indicated that the academic background of guidance practitioners tends to favour academic over vocational options, despite the ‘impartiality’ principle of career guidance. This issue is reiterated by the OECD (2010) which recommends to ‘develop a coherent career guidance profession, independent from psychological counseling and well-informed by labor market information’. In many EU neighbouring countries, the traditional delivery mode, emphasising a psychological approach (‘testing and telling’), still prevails in career guidance practice. A more pedagogical approach which is closer to labour market reality (instead of ‘testing’ the individual to opt for ‘tasting’ the world of work and emphasis on career information provision) would be more relevant and powerful. The wordplay from ‘testing to tasting’ invented by the author some years ago even entered the EU’s latest policy on VET (European Commission 2010). The EU Communication on VET stressed that guidance should be redirected from a ‘testing to a tasting approach’, providing young people with an opportunity to get acquainted with different vocational trades and career possibilities. In this context, special attention needs to be paid to the issues of transitions, learning and gender equality.

### ***Career Guidance Prior and Within Apprenticeships***

As outlined before, there is a certain academic bias in society which is not supportive for VET options in general and for apprenticeships in particular. A study from Jordan revealed that parents are even discouraging their children from considering VET opportunities (Prisma Marketing & Communication 2010). The societal perception and bias that VET and apprenticeships is a pathway for not well-performing students and those in a particular economic situation is difficult to tackle. Therefore, the scope to expand and improve service provision both within apprenticeships and prior to apprenticeships is huge. The latter is even more important for the following

reasons: If career guidance services prior to apprenticeships are not sufficiently developed, the potential for take-up of apprenticeship is likely more limited. At the same time, the trend of rediscovering apprenticeship is not adequately supported or even meets additional barriers through lack of information and career guidance services. If career guidance services within apprenticeships are not developed or even missing, the risk is higher that apprenticeships are implemented less efficiently in general. More specifically, that learning as well as mobility in apprenticeships is less supported. This can have a negative impact on both the quality of learning outcomes and the transition from apprenticeships to work. The double role career guidance can play as ‘change agent’ to improve current apprenticeships supply and as ‘eye opener’ to stimulate apprenticeships demand is not to be underestimated. Concluding, widening the access and shifting the mode of delivery towards a combination of the new career guidance paradigm (emphasis on career management skills, work ‘tasting’ and work experience) with resource-efficient approaches (career information, self-help) would likely contribute to improve school-to-work transitions. It might also better help to overcome stereotypes and barriers for choosing VET and apprenticeships as viable career options.

## References

- Akkok, F. (2006). *Career guidance in the MEDA Region: Country report on Turkey*. Turin: European Training Foundation.
- Akkok, F., & Zelloth, H. (2009). *Lifelong guidance – A feasible policy option for Turkey* (ETF Working Document). Turin: European Training Foundation.
- Badawi, A. A. (2006). *Career guidance in the MEDA Region: Country report Egypt*. Turin: European Training Foundation.
- Badawi, A., Sultana, R.G., & Zelloth, H. (2008). *Career guidance in Egypt: releasing potential, opening up opportunities*. Turin: ETF (mimeo).
- European Commission. (2010). *A new impetus for European cooperation in Vocational Education and Training to support the Europe 2020 strategy. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of Regions*. Brussels: European Commission. COM(2010) 296/3.
- European Training Foundation. (2008). *Country analysis Kosovo*. Turin: ETF.
- European Union Council. (2004). *Resolution of the Council and of the representatives of the Member States meeting within the Council on strengthening policies, systems and practices in the field of guidance throughout life in Europe*. Brussel: Council of the European Union.
- European Union Council. (2008). *Council Resolution on better integrating lifelong guidance into lifelong learning strategies*. Brussels: Council of the European Union.
- Fretwell, D., & Plant, P. (2001). *Career development policy models*. Synthesis Paper at the Second International Symposium on Career Development and Public Policy March 2011. Vancouver: ICCDPP.
- ILO. (2006). *Career guidance: A resource handbook for low- and middle income countries*. Geneva: International Labour Organisation.
- LINK Student Services. (2007). *Needs assessment survey*. Pristina: University of Prishtina.
- Mryyan, N. (2006). *Career guidance in the MEDA Region: Country report Jordan*. Turin: European Training Foundation.

- OECD. (2004). *Career guidance and public policy: Bridging the gap*. Paris: Organisation for Economic Cooperation and Development.
- OECD. (2010). *Learning for jobs. Synthesis report of the OECD reviews of vocational education and training*. Paris: Organisation for Economic Cooperation and Development.
- Prisma Marketing & Communication. (2010). *E-TVET Public awareness campaign, Secondary Research Study*. Amman: E-TVET Council.
- Rauner, F., & Smith, E. (2009). *Rediscovering apprenticeship. Research findings of the International Network on Innovative Apprenticeship* (UNESCO-UNEVOC Book Series Technical and Vocational Education and Training, Vol. 11). Dordrecht: Springer.
- Sultana, R. (2003). Review of career guidance policies in 11 acceding and candidate countries. Synthesis report. Turin: European Training Foundation.
- Sultana, R., & Watts, A. G. (2007). *Career guidance in the Mediterranean Region*. Turin: European Training Foundation.
- Sweet R. (2006). *Career guidance in the Western Balkans Region* (ETF Working Document). Turin: European Training Foundation.
- Sweet, R., & Zelloth, H. (2009). We need them, they need us: Work-based Learning Programmes for Young People in the Mediterranean Region. In *Rediscovering apprenticeship. Research findings of the International Network on Innovative Apprenticeship* (UNESCO-UNEVOC Book Series Technical and Vocational Education and Training, Vol. 11, pp. 103–112). Dordrecht: Springer.
- Swisscontact. (2008). *Tracerstudy on VET graduates* (Draft Document). Prishtina: Swisscontact.
- The Guardian (2011) One in four young people get no careers advice, survey shows. (Guardian.co.uk, 20 September 2011).
- Watts, A. G. (2009). *The relationship of career guidance to VET*. Background document for the OECD reviews of Vocational Education and Training. Paris: OECD.
- Watts, A. G., & Fretwell, D. (2004). *Public policies for career development. Case studies and emerging issues for designing career information and guidance systems in developing and transition economies*. Washington, DC: World Bank.
- World Bank. (2008). *Investing in Turkey's next generation: The school-to-work transition and Turkey's development*. Washington, DC: World Bank.
- Zelloth, H. (2008). *Career guidance policy and practice in Kosovo. Review of progress and feasibility of future intervention* (ETF Working Document). Turin: European Training Foundation.
- Zelloth, H. (2009). *In demand: Career guidance in EU neighbouring countries*. Luxembourg: Office for Official Publications of the European Communities.
- Zelloth, H. (2010a). *Preliminary mapping of apprenticeship supply in 29 EU neighboring countries* (Draft Working Document Presented to a Delegation of EU Parliamentarians on 5 November 2010). Turin: European Training Foundation.
- Zelloth, H. (2010b). *Career guidance development trends in Serbia* (ETF Working Document). Turin: European Training Foundation.
- Zelloth, H. (2011). *The way forward in career guidance development in Jordan. A policy paper* (ETF Working Document Prepared for the E-TVET Council and the National Human Resource Development Centre (NCHRD)). Annex to the Jordanian National Career Guidance Strategy. Turin/Amman: European Training Foundation/E-TVET Council.
- Zelloth, H., Visser, T., Van Deursen, P., Plant, P., & Keupers, M. (2007). *Strengthening career guidance policy in Bulgaria* (Peer Review Report of the CROSS/CINOP Expert Mission. Working Paper). Turin/s'Hertogenbosch: European Training Foundation/CINOP.

# Chapter 6

## How Can Governance, Private Sector and Work-Based Learning Promote Labour Market Relevant Training in Developing and Transition Countries?

Manfred Wallenborn

### Introduction: Problems of VET Governance

An interesting region for governance is Latin America. Nearly the whole continent developed in the 1960s nationwide training organisations. They followed a hierarchical governance model, which took into account the role and the responsibilities of the private sector and the trade unions. These organisations were steered by a tripartite governing board, which included the social partners<sup>1</sup> beside of various line ministries. The institutional setting was accompanied by financial regulations which forced the industry (or certain sectors) to finance with a levy on the payroll (between 1 and 2%) the VET system. This guaranteed a financial fundament to cover the training needs in VET centres. The centres delivered initial and adult training in different economic sectors. They contributed considerably to the Human Capital Development (HCD) in order to support economic and social development. Programmes to integrate informal sector workers in the society were delivered as well. Training was linked to small business promotion. Radical paradigm shifts like introducing dual modes of training delivery were relatively unsuccessful (exemptions in Peru and Chile).

The structural limits of the training organisations became evident in the late 1980s. The globalising economy fostered a rapid technological change with se-

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<sup>1</sup>A clear definition of social partners and social partnership is a useful tool in the European Union (EU), and it exists since years to foster dialogue and participation. However, other parts of the world follow proper sociocultural patterns. This is the reason why this article avoids a definition of social partners but tries to look at social partnership in different socioeconomic contexts.

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vere consequences for the labour markets, training delivery modes, work force preparation and problems of transition (Comisión Económica para América Latina (CEPAL) 2008). The Latin specific governance was exclusively institutionalised on the top level of the organisations but neglected on other levels. Hence, these institutions lost on the middle management and on the teaching level the contact to the world of work with serious consequences for curricula, teacher training, development of teaching aids and consequently for the transition to the world of work. The institutional setting hampered structured dialogues with the private sector on the teaching and middle management level.

Ten to fifteen years of such an institutional setting led to a questionable quality of supply driven training programmes. Institutional development strategies were not used to motivate teaching staff to update individual and organisational knowledge (Duryea and Pages 2002). Brazil, the first country setting up these training organisations, reacted with radical institutional reforms promoting the dominance of the private sector in managing industrial training. Nowadays, Brazil's SENAI (Servicio Nacional de Aprendizagem Industrial) offers high quality in initial and further VET for the technologically advanced branches. The private sector-driven governance board still includes trade unions and representatives of the trainees but follows closely the HCD needs of the companies.

Other countries of the region restructured the system in order to cope with the new challenges taking into account the relevant contribution of the social partners. Here are some examples:

- Chile's nationwide training organisation was privatised. A new public institution was set up, which procures rather than deliver training programmes in accordance with different demands in economic sectors and with regional specifications. Public funding was combined with private training delivery. Moreover, the new institution developed a quality assurance system for training providers to cover certain standards (from public- to private-driven training).
- Costa Rica established a dual training unit which liaised on operational level with the private sector. Today, the VET organisation procures partly training services, which only private providers can deliver on a high-quality level (from delivery to management of training).
- Colombia created round tables for different economic sectors (mesas sectoriales). Trainers of the training organisation and experts from industry are discussing constantly technological challenges in the world of work and the consequences for curricula and the design of training programmes (from isolation to cooperation).

The reform from hierarchical governance modes to multilevel-driven social partnership is ongoing. But there are some common messages. Governance must be well prepared and based:

- On institutionalised communication channels with the training experts of the private sector

- Managed by organisational units in the VET systems which rely on more degrees of freedom which allow to introduce incentives for teaching and the management of VET centres.
- ‘A mental shift is needed’ (Asian Development Bank (ADB) 2008, p. 126), which perceives VET more functional in the context of socioeconomic development. Less general education but competencies for productivity, employability and sustainable economic growth are required. They have positive effects on social inclusion and cohesion.

There is a common message: stakeholders should be involved on all levels of the VET system. They should be accountable that VET meets the requirements of the labour markets and hence sustain people’s life on a more productive level. VET systems must better cope with complexity, structural inertia of qualification’s development and unpredictable changes on labour markets. This requires communication among the social actors as a precondition for a non elitist performance in training and more efficiency.

Efficient governance creates communication and cooperation mechanisms on at least four levels and stages of the VET systems:

- Policy design and further development of steering tools like laws and regulations, social partnerships, financing, decentralisation and research
- Management of inputs (financial resources and infrastructure), teacher education and further training, curriculum development, etc.
- Learning processes and new learning arrangements, school autonomy and accountability, and local environment
- Outputs, e.g. assessment and certification, evaluation, feedback and policy learning (European Training Foundation (ETF) 2008)

But there is no universal solution how to implement these issues. Evidence from the past reveals that know-how from economics of education might influence educational reforms. But social systems like VET systems cannot be reduced to economic arguments. VET systems are a social construct and not economic ones (Moura Castro 2000). This has consequences for complex agreements on VET governance, as a short look reveals:

- Mexico’s new steering committee of the national qualification board CONOCER includes the five most relevant ministries for VET and representatives from the private sector and from the trade unions. The reform in Mexico tries to integrate better the National Qualification Framework (NQF) in the socioeconomic context. The future will reveal if a qualification framework, which was developed outside the dynamic process of a social partner-driven dialogue can be readjusted to an accepted governance model, which rely on social partnership.
- The Spanish further training policy includes systematically social partnership. It is not an elite driven approach from technocrats like formerly in case of Mexico. La Fundación Tripartita is a social construct which builds on cooperation of public administration, employers and workers/trade unions on a multilevel approach to deliver demand-driven and targeted training (Fundación Tripartita

2006). What is suitable for Spain and other European countries (European Centre for the Development of Vocational Training (Cedefop) 2007) must be discussed in the partner countries on the background of ‘classical weaknesses’ and structural limits of the VET systems.

## **Donor’s Concepts and Methods: History and State of the Art in VET Cooperation**

The World Bank (1991) initiated a conceptual shift of donor’s approaches to VET governance. In the 1970s and 1980s of the past century, donors addressed nearly exclusively Ministries of Education (MoE) and Ministries of Labour (MoL) as national partners for VET cooperation. These entities are mostly responsible for school- or centre-based VET. The private sector was not considered as a relevant partner, despite of the existence of nonformal work-based training in workshops and large enterprises. Donors considered VET governance as a public domain.

Even in those times, experts were aware that VET should deliver world of work-related competencies for the labour force which was supposed to work in the emerging industrial structures. The absence of private sector participation in VET forced donors to finance and built up school-based and public-driven centres. Private sectors ‘work realities’ were simulated in training programmes. International assistance was considered as an instrument to foster HCD. Training centres for initial and further training delivered good quality as long as donor support was available in terms of money and technical advice.

These centres were operated by local staff in cooperation with international experts. In terms of today’s criteria for sustainable development, nobody looked in the past to the problems of such interventions:

- Which national partner will mobilise and contribute to the running costs and will finance further investments in technical infrastructure, which are required to avoid obstacles in technological progress?
- Who is sufficiently competent to manage these centres and deliver a constantly updated training for different target groups?
- Who maintains close relations to the private sector under what institutional settings and governance policies?

Consequently, the performance of these training centres declined after the international cooperation ended. Support was no longer available: ‘Week funding has significant impact on maintenance of buildings and equipment. Management was also hampered by lack of qualified staff and high staff turnover in project units’ (World Bank 1989, p. 60). Such findings were the rationale for a conceptual shift initiated by the World Bank. The 1991 paper suggested to decline donor spending on VET and favoured private-driven training initiatives. But funding from

donors to private stakeholders would have been a subsidiary distorting market-driven competition. Consequently, the bank declined spending on VET.

Some exemptions remained. Germany – formerly one of the most visible VET donors – promoted as well school-based VET assistance. But in countries with a certain industrial sector like Brazil or Korea, some projects tried to introduce an adapted model of the dual system. Apart of the ministries, the capacity of private sector's organisations (like chambers and branch organisations) and trade unions were developed to participate in the governance of the VET system. But project's experience revealed that collective bargaining as a mode of steering and managing a VET system did not follow the same patterns like in Austria, Germany and Switzerland where cooperation between the public and private sector in VET can be tracked back in the nineteenth century.

It was overlooked that the social partners in different cultural contexts had other priorities like security at the work place, legal labour conditions and salary schemes on the trade unions side. Employer's organisations were more dedicated to the problems and perspectives to access new markets and their political influence on governance and policies, etc. Hence, the majority of these dual projects had no sustainable impacts because the partners couldn't cope with two major constraints:

- Donor intervention has a structural problem: it creates artificial structures (Wallenborn 2008) which influence negatively and hamper partly the formulated project objectives, in this special case the mobilisation of social partners for VET governance.
- Nationals and donors underestimated the 'social and cultural factor' for a systemic involvement of the private sector and the trade unions in the governance of VET.

What works in Europe is not necessarily a solution in another sociocultural context. The contextualisation of VET was in those times partly reduced to technical problems of how to implement innovations. Donors underestimated traditional forms of social dialogue, bias of perceptions of public and private responsibility in education and training in different environments or politically influenced prioritisation of values and objectives in the private sector associations and the trade unions. Stockmann (1996) carried out research on German VET cooperation and highlighted that relatively successful VET projects had three criteria in common:

- A certain level of institutional and organisational performance of the partners
- A minimum of institutional capacity, readiness for innovation/reform and partly new governance approaches
- Effective programmes for further staff training and institutional capacity development during and after the project cycle

Germany recognised in policy papers (Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (BMZ) 1992, 2005) that the dual approach is hardly to copy. Traditions and customs, lack of resources, underestimation of VET and HCD for the socioeconomic development from the locals, other priorities in the partner countries (despite of following rhetorically donor statements), etc.,

are relevant criteria which follow different and partly unknown intentions and objectives. Dual approaches are a social construct derived from specific historical background. This conclusion from former project experience makes social systems (like VET systems) reluctant and resistant for copying comprehensive new VET approaches. Consequently, the German policy papers identified a key area in future VET cooperation which was called ‘promotion of systemic development in VET’, considering several approaches and different governance modes relevant for more efficiency and effectiveness. Diversity and building on local structures are nowadays the prevailing criteria for the design of VET projects. This gives space for work-based learning and private sector involvement.

## **Main Findings About Public Training in Schools and Learning at Work**

Formal and initial VET in developing and transition countries is public driven. The most common ‘reduction of complexity’ (Luhmann 1995) and institutional setting of public VET are secondary schools, which offer training or technical education. The influence of private stakeholders on governance is low. There are laws and regulations based on the sociocultural heritage and political priorities of the countries. Hence, VET is considered as a public task and as an educational rather than vocational option for lower social classes.

The economic globalisation and the scarce resources in developing and transition countries lead to questionable achievements of a social demand-driven school-based VET system. What was considered as an opportunity for less privileged young people has converted in a structural obstacle for these target groups on the labour markets. This is related to weaknesses of public VET in countries, which created the formal (school-based) institutional setting, but do not have any resources at all to operate on a well-performing level (Wallenborn and Heyneman 2009). The available funds are spent nearly exclusively for low teacher salaries.

Research findings (OECD 2008; ADB 2008; World Bank 2004) stated as weaknesses of public training:

- Training in industrial and modern craft trades is costly, and needs in a rapidly changing world constantly updates. If a country is not able to finance new equipment and the retraining of teachers, the quality of VET will rapidly decline.
- Ministries of Education favour educational rather than training approaches. The curricula remain mostly stable for a long time and do only partly refer to practical skills and competences required on the labour markets.
- The scarce financial resources for updating the schools led to isolation of the vocational programmes from the world of work: VET achievements with outdated competencies are contra productive to the employability of the school leavers.

- Schools do mostly not operate in a dynamic environment which is influenced by globalised markets and competitiveness. Teachers and school directors are therefore only partly the suitable experts to prepare young people for the world of work. A structured dialogue with entrepreneurs is missing.
- Publicly managed training does not use the know-how for reforms and innovation, which could be contributed from the social partners, based on their experiences on markets and in the world of work.
- Steering and managing school-based VET is primarily perceived as an administrative problem from the ministries. The ‘education bias’ in ministries’ management styles of school-based training are prevailing excluding civil stakeholders from governance modes.

Socioeconomic progress in rapidly developing countries has a big influence on education and training policies. A crucial question is if the stakeholders who are responsible for the governance consider correctly the need for changes. Global trends should be tackled from the government and social actors with strategic policy decisions to reform not only training delivery but adjusting as well the governance modes: ‘The private sector is being encouraged to play a bigger role in the provision of education and training especially in multidisciplinary knowledge areas and in new disciplines ... to meet the increased demand for highly skilled workers for more complex production processes, more advanced skills training centres in specialised fields will be established’ (Zanifa 2008, p. 85). This government statement considers the structural weaknesses of public training. Government still is the overall responsible to set up a legal framework for private sector’s participation in VET, but best practice recommends that the stakeholders should already be involved in outlining new policies. Moreover, the management and the delivery of high-quality training need degrees of freedom in work-based learning processes, integrate regional specifications and private sector stakeholders in curriculum development.

The private sector is mostly interested in functional know-how and practical competences for an efficient production. Formal and informal further training activities can build on this interest. A solid fundament of general education is compulsory but not sufficient in the world of work. The technological and economic influences from the globalised economy require flexibility in terms of duration and contents of VET. This implies a constant monitoring of a potential gap between technological and HCD in the enterprises.

Donors (ADB 2008; World Bank 2004) stated that private sector organisations are apart from financing VET even committed to cooperate on different levels with public training centres or with the decision makers. The public side should be aware that such new initiatives for sharing responsibility in VET are not considered as a mere loss of political power but as a strategic opportunity that VET might be funded from additional resources. Even in developing countries, economic activities are hampered by skilled-worker shortages (Organisation for Economic Cooperation and Development (OECD) 2006, p. 189).

## Private and Public Sector's Participation in VET

The private business sector is far from being homogenous. His contribution to VET ranges from informal 'training' which rather exploits young people too formalised VET delivery in modern enterprises. Moreover, private (non-profit) organisations are in many countries an important player in school-based VET. There are no universal solutions and single systemic options for the sustainable development of VET systems, and the vast range of private training is ambivalent in terms of several criteria (high/low quality, formal/nonformal, profit/charity, etc.). The distinction between private training providers (profit- or charity-driven) and enterprises, which are organising or purchasing training programmes for their own staff, is relevant.

Training for company staff always fulfils requirements in order to cope with the challenges of the market. Training for profit could be localised in different segments and sectors offering questionable quality in low-cost areas but as well highly sophisticated training to follow up recent technological developments. Even VET programmes could be financed completely from private contributions if curricula, premises, teacher qualifications, etc., are following the regulations of the public system. Apart of new reform ideas, tradition and culture will decide if the social actors will be more intensively involved in future governance models. The changing balance between initial and further training and upcoming lifelong learning strategies will force the decision makers to reconsider new governance models and new modes of VET delivery.

Globalisation might be for many countries not only a challenge but as well an opportunity. The knowledge societies of the developed world have today a manufacturing sector, which is not any more growing compared to the service sector. Production processes are outsourced to countries like Malaysia, China, etc., which have a qualified labour force and could perform on a sophisticated technological level. The high prices for the labour force in the developed world makes it unlikely that outsourced production will switch again to the northern countries. The strategic question for benefitting from outsourcing, however, is if the decision makers in the countries recognise the growing importance for new governance models in VET considering the following issues:

- Structural deficits in schools do not deliver suitable training, and a vocational identity for modern crafts and industrial processes and public curriculum developers are too far away from new technologies and correspondent skills
- The growing importance and flexibility of lifelong learning strategies require result-oriented action rather than planning
- Enterprises are using facilities more efficiently for production and simultaneously for training activities
- Public VET alone cannot cope with the demographic trends in many countries offering at the same time a high-quality training for all (equity).

New approaches consider the vast potential of the private sector in VET. This has quantitative and qualitative implications for the VET systems. Data for EU

reveals that apart of countries like Austria and Germany with huge apprenticeship schemes, other countries recently follow this trend: Apprenticeship figures increased in Hungary from 6,616 to 32,117 between 2000 and 2005, France will increase between 2005 and 2009 from 360,000 to 500,000 and in UK, the number of apprenticeships has grown from 75,000 to 240,000 in the last 10 years (McCoshan et al. 2008, p. 90).

But not only developed countries face problems with school-based VET. Research carried out in Indonesia states that school-based VET does not lead to advantages for the school leavers on the labour market but lead to a significantly lower academic achievement (Chen 2009, p. 22). Indonesia's policy intention to extend the facilities for school-based VET up to a share for 70% of an age group is on the background of these findings, not very realistic and would absorb resources which are needed in other (educational) sectors.

Enterprises from developed countries have mostly a positive influence on the companies of the less developed countries in terms of technological innovations and on development of labour force skills. Empirical research revealed that 'Foreign ownership seems to facilitate transfer of technology through cooperation arrangements on innovation, particularly in less developed countries, and increasingly so with the decreasing development level of the country' (Srholec 2009, p. 57). What are the crucial points for the future? School-based VET has structural limits in order to contribute to development objectives like sustainable growth, employability and productivity. There is a growing awareness, that these problems cannot be solved with reforms of public training, because 'the legitimacy of the educational sector rests heavily on assumptions that transfer occurs between an educational institution and a workplace' (Konkola et al. 2007, p. 211). But mere market-driven VET is as well not an overall solution. Markets tend to discriminate groups with a deprived social background – even in form of training vouchers, which are valid for programmes of profit-driven private training providers (Hsieh and Urquiola 2006). Voucher systems are doing better when they include the social partners like the Austrian case reveals (McCoshan et al. 2008, p. 79).

OECD (2003) stressed another issue which makes work-based learning to a viable alternative: foreign direct investment (FDI) is linked to a certain level of HCD. But if developing countries have no resources to pre-deliver demand-driven training to investors, it would be suitable to offer investors some incentives like tax rebates. The money from such rebate schemes could be spent to train own staff and staff from smaller enterprises which belong to the supply chains.

Donors share these opinions. Moreover, they have a high responsibility to develop a constant dialogue with the partners, which:

- Builds on common trends in education policies, highlighting the arguments and best practices for reform and a tight correlation between skills acquisition, training quality and growth (Hanushek and Woessmann 2007)
- Develops in a participatory approach ownership driven solutions for the VET systems, which rely on the national resources and follow sociocultural specific modes of communication and cooperation

- Take into account the emerging consequences for education and training systems affected by the transnational economic crisis, which is another argument for participation of private stakeholders and their financial contribution to VET.

## Conclusions for New Forms of VET Governance

If transition and developing countries perceive VET reforms in the triangle of sustainable growth, employability and productivity, they will as well discuss how VET systems can be more self-steered and auto-regulated. Multilevel participation of social partners in complex societies is the best option for VET systems to cope with increasing complexity in technological development and labour markets. In a globalised world, societies and their subsystems (education, economy, legal and cultural system, etc.) are too complex, as being efficiently steered by one single driver. However, capacity development in governance is a precondition.

Improved capabilities of institutions and governance modes should be aware of complexity and structural inertia (Schreyoegg and Kliesch-Eberl 2007). This is the framework in which decisions for reform must be taken and in which social partners act. Another issue which should be agreed on is the participation of the social partners and vast decentralisation with higher accountability for the local VET expertise (ADB 2008). ‘Not using existing private resources and simply trying to make the public sector grow is a highly inefficient policy without any doubt’ (Mora 2005, p. 20). New governance modes finally have three dimensions considering the available resources and private sector involvement:

- A more effective and efficient use of the existing premises of the education and training systems including lifelong learning
- A new balance between general and vocational education must be identified and training modes created coherent to recent socioeconomic developments and
- Using existing investments and efforts in human capital development of the private sector, which the public sector is mid- and long-term not able to afford.

The latter option is a key element of further socioeconomic development and of social partnership. It is about using in an efficient way training premises and resources which already exist and create an environment that would allow the private sector to contribute to education and training. The tight correlation of VET with the world of work requires cooperation on macro, meso and micro level of the VET systems. Cooperation and communication is not an individual and voluntary act in VET systems but must be institutionalised in specific organisational arrangements. There are no universal solutions for reform, and a monolithic approach to governance is questionable. But there are some issues and criteria which should be seriously considered:

- *Economics of education* are relevant, but every education system does not exclusively build on economic evidence, neither in the developed world nor in

developing and transition countries (Jimenez and Patrinos 2008; Duryea and Pages 2002). Cooperative governance operates with a broader scope than economic indicators and financial support. Partner countries cannot rely on Norwegian solutions of apprenticeship training where government pushed with financial incentives the implementation of a training scheme, which requires for co-governance of the private sector. The countries would not be able to spend the resources which Norway pays to the private sector for apprenticeship training (OECD 2008). But interesting are the arguments for the Norwegian policy: technical progress in many industrial areas makes the restrictions of school-based VET evident. Investments and rates of return are seen critically or will be even lost, if the VET systems are not reformed towards private sector's participation. Similar experience faces the construction sector in Ireland with its apprenticeship system (O'Connor 2006).

- *Private versus public interests:* There is evidence from countries with work-based learning schemes/dual systems that the private sector has economic interests in training beyond maintaining the human capital stock of the enterprises. Research carried out in Germany reveals that 18.5% of all companies involved in initial training use it as a substitution strategy for more expansive labour; 43.75% considers expenditure on training as a suitable investment strategy for the technological challenges of the future (Mohrenwieser and Backes-Gellner 2008). The remaining share is mixed and do not follow an exclusive strategy. Conclusions can be drawn for reform in less developed countries: the problem is not that the private sector does not provide training. The real problem is whether the private sector is organised formally and systematically to assume responsibility in an approach of VET, which counts on its involvement. This is an area of future donor activities.
- *Low-cost training versus quality and returns to investment:* 'Without careful quality control, private institutions can be tempted to become so-called 'diploma mills', producing credentials rather than adequately trained and educated individuals' (Wolff and Navarro 2001, p. 14). If private providers are profit driven, there is a certain tendency that they will offer low-cost programmes in professional areas like business and trade, where investment in premises of VET is low and could be rapidly recovered by fees. If trainees are not supposed to work with motivation in the own enterprises, there might be a possible conflict between expectations of profit from VET and quality. But research carried out in Switzerland and Germany revealed (Wolter et al. 2007) that dual training of apprentices in the firms is on high-quality level not only costly but generates in many enterprises even profit. Apprentices learn while being simultaneously integrated in the production process.

Global industrial outsourcing will challenge the transition and developing countries to accept this 'mental shift' (ADB 2008, p. 126) and implement more work-based learning venues as sustainable alternative. This mental shift should promote vocational motivation and identity among young people – a precondition for better socioeconomic development and more options for the individuals. Policy makers

are responsible to reconsider the consequences for innovation and reform taking into account that ‘an in-depth knowledge of modern technology can successfully be acquired through participation in work-based learning. This limits the effectiveness of vocational education and classroom teaching as an alternative mean of producing a high-skills economy’ (Ashton and Green 1996, p. 101).

A work-based vocational identity which fosters a better transition to employment requires educational reforms and the appreciation of the importance of work-based learning: ‘Reconceptualising the concept of apprenticeship as a social theory of learning along the lines we have described, offers, we would suggest, a basis for turning these demands into practical programmes’ (Guile and Young 1998, p. 188). The most important advantages and disadvantages should be solved before implementing such work-based learning schemes: the significantly better pathways of work-based learning to employment should be accompanied with more comprehensive training and education options after such initial VET modes, taking into account the growing relevance of higher qualifications in a knowledge society. But the attractiveness of work-based learning will remain, because it could be closely further developed by social partners which look responsively to labour markets, economic and technological progress (International Labour Organization (ILO) 2008). Flexible and participatory management mechanisms will assure that supply meets better the demand than in school-based VET. They are as well a precondition for the increasing number of post secondary work-based training programmes.

## References

- Asian Development Bank. (2008). *Education and skills. Strategies for accelerated development in Asia and the Pacific*. Philippines: Metro Manila.
- Ashton, D. N., & Green, F. (1996). *Education, training and the global economy*. Cheltenham: Edward Elgar.
- Bundesministerium für wirtschaftliche Zusammenarbeit. (1992). *Sektorkonzept‘ Berufliche Bildung*, Bonn.
- Bundesministerium für wirtschaftliche Zusammenarbeit. (2005). *Technical and vocational education and training and the labour market in development cooperation*, Bonn.
- Comision Economica para America Latina. (2008). *Los mercados de trabajo, la protección de los trabajadores y el aprendizaje de por vida en una economía global*, Santiago de Chile.
- Chen, D. (2009). *Vocational schooling, labor market outcomes and college entry. A policy research working paper of the World Bank No. 4814*, Washington, DC.
- Duryea, S., & Pages C. (2002). *Human capital policies: What they can and cannot do for productivity and poverty reduction in Latin America, An Inter-American Development Bank working Paper No. 468*, Washington, DC.
- European Centre for the Development of Vocational Training. (2007). *Zooming in on 2010: Reassessing vocational education and training*, Luxembourg.
- European Training Foundation. (2008). *Policy learning in action (ETF yearbook 2008)*, Luxembourg.
- Fundación Tripartita para la Formación en el Empleo. (2006). *Agreement on vocational training for employment*, Madrid.

- Guile, D., & Young, M. (1998). Apprenticeship as a conceptual basis for a social theory of learning. *Journal of Vocational Education and Training*, 50, 2. Retrieved from <http://dx.doi.org/10.1080/13636829800200044>.
- Hanushek, E., & Woessmann, L. (2007). *The role of education quality in economic growth* (World Bank policy research working paper 4122), Washington, DC.
- Hsieh, C. T., & Urquiola, M. (2006). The effects of generalized school choice on achievement and stratification: Evidence from Chile's voucher program. *Journal of Public Economics*, 90(8–9), 1477–1503.
- International Labour Organization. (2008). *Skills for improved productivity, employment growth and development*, Geneva.
- Jimenez, E., & Patrinos, H. A. (2008). *Can cost-benefit analysis guide education policy in developing countries?* (A policy research working paper No. 4568). Washington, DC: World Bank.
- Konkola, R., Toumi-Groen, T., Lambert, P., & Ludvigsen, S. (2007). Promoting learning and transfer between school and workplace. *Journal of Education and Work*, 20(3).
- Luhmann, N. (1995). *Die Gesellschaft der Gesellschaft*, Frankfurt.
- McCoshan, A., Droyd, A., Nelissen, E., Nevala, A. (2008). *Beyond the Maastricht Communiqué: Developments in the opening up of VET pathways and the role of VET in labour market integration*, Birmingham
- Mohrenwieser, J., & Backes-Gellner, U. (2008). *Apprenticeship training – What for? Investment in human capital or substitution of cheap labour?* (Leading House Working Paper No. 17). Zürich: University of Zürich
- Mora, J. G. (2005). *Public-private partnerships in Latin America: A review based on four case studies*. Working paper presented to Kennedy School of Government, Harvard University, Cambridge.
- Moura Castro, C. (2000). *Secondary schools and the transition to work in Latin America and the Caribbean*. Washington, DC: Ed: Inter-American Development Bank.
- O'Connor, L. (2006). Meeting the skill needs of a buoyant economy: apprenticeship – The Irish experience. *Journal of Vocational Education and Training*, 58(1).
- Organisation for Economic Cooperation and Development. (2003). *Human capital formation and foreign direct investment in developing countries* (Working Paper No. 211), Paris.
- Organisation for Economic Cooperation and Development. (2006). *Policy framework for investment: A review of good practices*, Paris.
- Organisation for Economic Cooperation and Development. (2008). *Learning for jobs: OECD reviews of vocational education and training*, Norway. Retrieved from [http://www.oecd.org/searchResult/0,3400,en\\_2649\\_201185\\_1\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/searchResult/0,3400,en_2649_201185_1_1_1_1_1,00.html)
- Schreyoegg, G., & Kliesch-Eberl, M. (2007). How dynamic can organizational capabilities be? Towards a dual-process model of capability dynamization. *Strategic Management Journal*, Retrieved from DOI: 10.1002/smj.613
- Srholec, M. (2009). Does foreign ownership facilitate cooperation on innovation? Firm-level evidence from the enlarged European Union. *European Journal for Development Research*, 21(1), 47–62.
- Stockmann, R. (1996). *Die Wirksamkeit der Entwicklungshilfe – eine Evaluation zur Nachhaltigkeit von Projekten und Programmen*, Opladen.
- Wallenborn, M. (2008). Are recent development strategies really doing better? The new aid architecture for VET. *Norrag News*. Retrieved from, [www.norrag.org](http://www.norrag.org)
- Wallenborn, M., & Heyneman, S. P. (2009). Should vocational education be part of secondary education? *Journal of Educational Change*, 10(4). New York: Springer.
- Wolff, L., & Navarro, C. (2001) *Public or private education for Latin America? That is the (false) question*. Washington, DC: Inter-American Development Bank
- Wolter, S., Schweri, J., & Walther, B. (2007). *Lehrlingsausbildung – ökonomisch betrachtet*, Zürich
- World Bank. (1989). *Vocational education and training: A review of World Bank investment* (A World Bank discussion paper), Washington, DC.

- World Bank. (1991). *Vocational and technical education and training* (A World Bank policy paper), Washington, DC.
- World Bank. (2004). *Skills development in Sub-Saharan Africa*, Washington, DC.
- Zanifa, M. Z. (2008). Malaysian Government policies on human resources development: Towards meeting the needs of the knowledge-based economy. In G. Loose, G. Spoettl, & Y. M. Sahir (Eds.) *'Re-engineering' dual training – The Malaysian case*, Frankfurt.

# Chapter 7

## A Renaissance for Apprenticeship Learning and Its Implications for Transition Countries

Sören Nielsen

### Introduction

In Claudio Magris' 'Danube', a central European tradition in the social organisation of society is described. He tells about a Danube bed tradition, where the German apprenticeship system has set its imprint on countries along the road to the Black Sea, inspired by the German 'Handwerker' tradition and its institutions being brought along in the 'Ulmer Schachtel' transporting the German settlers down the Danube. It is based on apprenticeship, social partnership in the form of the guilds, and strong social status and professional pride of competent skilled workers.

In the Straight Street in Damascus, there is an exquisite shop and workshop producing fine handicrafts in wood with an owner/master craftsman who has become very rich. In a shabby side street, there is a very small shop with a poor and bitter craftsman who was an apprentice in the fine workshop for 8 years with next to no salary and now unable to compete.

In Riga, the two most beautiful and proud buildings are the houses of the *Kaufmänner* and the *Handwerker*, built in the Middle Ages by the German guilds in a country where before no native Latvians were allowed to work with bricks, were forbidden to enter an apprenticeship and only allowed to stay at night on the Riga side of the Daugava in case of fire.

Examples like these illuminate that learning organised as apprenticeship depends historically and culturally on a self-regulated social organisation. It must be built on strong social partnership with recognised and fair access, willingness of companies to participate, approved work contents in terms of technology and job construction and statutory time servicing requirements. Relations between

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training and employment are formalised through collective agreements. In short, it must be based on a contractual arrangement.<sup>1</sup> These conditions are not easy to establish in countries in transition. In Slovenia, a former Yugoslav country with an Austrian inspired VET tradition, although many structural components are at hand, recent history has demonstrated that a new model of apprenticeship could not be implemented because companies are not willing to provide placements. In FYR Macedonia, also a former Yugoslav country but without the Austrian VET tradition, the German financed GTZ reform of 3-year VET programmes in 8 schools requiring work placements on the German dual model have completely crowded out available placements. In many transition countries, attempts to develop 'partnerships' between schools and companies have remained isolated because of the weakness of collective organisation by employers as well as a low commitment of trade unions. Up to now, they have not led to a collectively organised participation of employers and unions in the reform and provision of VET for young people.

These realities make it difficult to introduce apprenticeship systems in transition countries. All countries are faced with the same challenge: a severe crisis in the relationship between education and economic systems. Imbalances bear witness to flaws in the articulation of these systems: a gradual rise in youth employment, paradoxically associated with recruitment difficulties for companies; problems of transition, affecting even highly qualified young people; the doubt about the value of diploma and certificates in relation to recruitment and access to employment; the fact that certification is not suited to actual company needs; and so forth.

On the backdrop of these challenges, the learning opportunities of work-based learning are so rich, also if lifelong learning is ever to become a reality, that we must try to devise concepts and test models which tap into such learning arenas also in VET reform strategies in ETF partner countries. This chapter will first argue that there is a need to rebalance the contemporary emphasis on learning outcomes and again set focus on how people actually learn. Then discuss the new interest for practice learning and resources in the learning landscape, sometimes termed as a 'renaissance' for apprenticeship. And finally draw some lessons for a possible new, open VET architecture in countries in transition based on the analysis carried out.

## Research Problem and Methodology

This chapter, which builds on a wealth of empirical analyses on work-based learning, (Nielsen and Kvale 2003) reflects on challenges experienced in transition countries and logical reasoning, analyses the learning potentials in 'external'

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<sup>1</sup>This requirement goes both ways. The Syrian example shows that unregulated apprenticeships can result in exploitation. In Denmark, from 1905 all new apprentices had to hand in their contracts to the local head of police to ensure that they did not run away as soon as they had learned enough. The 'apprenticeship investment calculation is based on a duration of time which balances the initial costs with later profits for companies.

working life contexts and does not go into discussions on 'internal' learning processes of the individual. During the last years, a renewed interest in aspects of the traditional apprenticeship form of learning organisation has been noticeable in learning process research (see for instance Ainley and Rainbird 1999). Learning theory has been concentrating too much on the formal aspects of learning and has been studied as processes 'inside' the individual while neglecting the social practice in which learning takes place. Technological and work organisation developments have sharpened the focus on the needs for personal and general qualifications (or key competences). As these new competences cannot be developed in isolation from technical or vocational skills, there is a growing research interest in understanding how learning in the workplace takes place, how to create conditions which facilitate learning at work and to analyse and explain how workplaces can be understood as collectives that learn. Social constructivist learning theory has contributed to such analyses that perceive learning as closely intertwined with social practice.

A key perspective for this research interest has been the conceptualisation developed some years ago in an OECD study (OECD 1998). In this approach, education and training is, with a topological metaphor, described as a 'learning landscape'. A landscape of learning possibilities where the learner has options and where it is therefore possible to establish an individual 'pathway' in the form of a personal training plan. This is different from the previous idea that courses of education consist of a few standard programmes, the same for all and with students divided into classes following each other and learning at the same pace. This pragmatic view has its emphasis on social practice and situated learning and points towards the possibilities for learning that exist in participating in a community of practice at a workplace. The prevailing tendency to scholastic learning in VET has impaired the possibilities for students to take a walk in precisely *the* learning landscape where they are supposed to function professionally after the education. The new focus for educational research on learning should thus be on conditions, environments, contexts and practices in place of a continued research interest on assumptions and theories of individual psychological processes.

## **Changing Frameworks (NQF) or Changing Actors?**

Learning processes in whatever form have been relatively neglected in VET policy and research in the last decade. How we actually learn has often been perceived as a 'black-box' phenomenon, while the policy focus has been set on standards and assessments of predefined outcomes.

In Anglo-Saxon countries, the development of initial vocational training took the form of school-based alternatives to academic education. In the United States Community Colleges (at post-secondary level) were established. Vocational training in the UK was developed through the expansion of Further Education Colleges (at post-secondary level) and the development of a comprehensive national qualification system (NVQ, GNVQ). The Anglo-Saxon strategy for qualifications frameworks have dominated the VET reforms in transition countries in the past

decade with the emphasis being put on defining standards and through assessments measuring performance against these defined standards, while learning processes have been neglected.

A national qualifications framework (NQF) is a framework that links existing qualifications of different levels and types in a coherent and consistent way based on a common and agreed set of descriptors of qualifications and criteria for deciding on level and type. Because of their nature, they can provide greater transparency of what qualifications mean and they can offer a way of developing learning pathways that people can follow throughout their lifetime. Thus, they are potentially of great interest to everybody who is involved in education and training: policymakers and administrators, employers, teachers and other practitioners and of course also students and their parents. When representatives of these stakeholder groups are involved in developing a NQF, this will also lead to improve their trust in single qualifications and hence increase the attractiveness of vocational education and training. It is no surprise therefore that many countries are currently engaged in discussions about developing NQFs.

The shift from education-based standards to learning outcomes has had many advantages. Among these is a growing understanding that learning outcomes can be achieved in different ways and not necessarily only through standardised formal schooling. Recognition of prior learning and assessment of non- and informal learning have therefore moved up on agendas in many countries. Not least due to the fact that this also supported the search for greater cost-effectiveness and efficiency. Learning outcomes make it possible to align different levels of qualification better and also greatly facilitate communication between the world of education and the world of work. Qualifications are a kind of currency on the labour market.

However, there is considerable discussion about which kinds of learning outcomes are relevant for modern education and employment, and there is a growing understanding that traditional concepts of knowledge and skills are no longer appropriate. Initial attempts for developing national frameworks have very much built on the behaviourist approaches for defining learning outcomes: graduates should prove that they are able to do what is required in various *predefined tasks*. For a long time, learning outcomes referred basically to a set of separate knowledge packages or skills. Later, it was realised that even when people have the required knowledge and skills, they may still have inappropriate attitudes for the work they have to do.<sup>2</sup> The current discussion about competences is all about these issues. But the emphasis is now on the capacity to integrate skills, knowledge and attitudes in the application of learning for solving *work problems in unexpected situations*. Obviously, this is quite a different approach to what students should be able to do as a result of learning. But it reflects fundamental changes in employment systems and work organisations where lifelong employment, job security and standardised

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<sup>2</sup>Especially in the service sector of course (the classical example is that of the waiter) but with the introduction of the market also, the importance of the customer in other sectors has increased, including in education and training.

production and services have been replaced by high levels of uncertainty, flexible forms of production and continuous innovation and change of products and services.

In several countries, however, the shift towards learning outcomes has perhaps gone too far and has even led to the belief that it really does not matter at all how people arrive at certain learning outcomes. Assessment of learning outcomes has thus tended to replace education and training as a learning process. Investment in assessment procedures and structures has gone up at the cost of investment in education facilities and preparing teachers. There is increasing concern about this trend, especially given the understanding that exactly what people used to learn at school and the way how they are learning may no longer be appropriate.<sup>3</sup> Rapidly changing and unstable labour markets may ask for new kinds of (key or core) competences with the help of which people will be able to cope with increasing uncertainties in their environments. Lifetime jobs or stable long-term employment no longer is the realistic perspective for the majority of the younger generations. Lifelong employment has been replaced by lifelong learning and employability has long become a risk and a challenge.

Thus, it is increasingly understood that it really does matter how people arrive or not arrive at certain qualifications. Learning is not something that is the same for everybody and can therefore not be completely standardised, nor does it occur automatically in the same way for everybody and certainly not because of the availability of recognised qualifications. As a result, there is a growing interest in many countries – also at the policy level – to pay more attention to the quality of learning processes. The key issue is that attention to learner needs and to quality learning processes is back on stage again and not only with the purpose to satisfy current labour market needs.

## **The ‘Renaissance’ of Apprenticeship**

Most educational research is based on learning as a deliberate and reflected process, while work-based learning takes place as an (unintended) side effect running in parallel with undertaking work processes. Learning in a practice context is related to the survival of a company; in principle, it is intertwined with solving given tasks in a production process where the learner is part of a community of practice. Learning is situated: the point-of-departure is the workplace community of practice and the learner’s learning process is subsumed under this. The learner or the apprentice is placed in a multigenerational environment and is continuously confronted with a multitude of various experiences and competences. In this perspective, learning

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<sup>3</sup>Replacing an emphasis on learning by assessment is obviously easier when learning is about separate pieces of knowledge and skills and more complicated when a broader concept of learning and competence exists. See for this discussion also the distinction between two major education and training scenarios in Europe by Felix Rauner (2007).

is intrinsically linked to the process through which the learner changes his/her participation from a peripheral taking part in a community of practice to becoming a responsible participant.

This domain constitutes a different learning space with other learning and evaluation forms than those found in schools. In companies, the primary aim is production and services, and learning is an additional gain from taking part in a joint production process.

A discussion is currently ongoing on a 'renaissance' of apprenticeship as a contemporary learning form relevant e.g. in IT-based changes on work organisation (Winther and Taylor 1996). Richard Sennett (2008) argues that we now have to find back to the intrinsic values of the traditional way of qualifying skilled workers and ensure that skills are given the necessary time to develop, that skills are learned in a social context and that the training of the competent skilled worker is based on exercise, exercise, exercise – 'the golden rule is 10,000 hours', he states. Giving historical examples from the violin builders in Cremona and onwards (another example could be the proud buildings in Riga mentioned above), he argues that also today a doctor of medicine, a carpenter, an artist are all craftsmen being busy all the time with making details of their work still more perfect. Modern labour markets on the other hand function by an extreme flexibility, hire and fire policies, outsourcing, splitting of the intelligence of head and hands and reducing the time needed to create the autonomy of the good craftsman. The fundamental challenge is to understand how to become a good craftsman. In the modern world, craft has been reduced to pure measurable technical skills and vague competencies, but this is not at all what genuine craftsmanship is about. Craftsmanship is about continuously finding new and refined ways to make things function and to learn from what does not function well.

This perspective on learning is not new. In the *Nichomachean Ethics* (Aristoteles 1995), Aristoteles analyses the qualitative difference between theoretical (*episteme* and *teoria*) and practical knowledge (*techne* and *phronesis*),<sup>4</sup> and he emphasises again and again that except from the study of mathematics, metaphysics and other theoretical fields, we learn best by doing what we are to learn in exactly the situation where what is learned is to be applied. We become good carpenters by building a house, good doctors by curing patients and good musicians by playing the instrument. Aristoteles' argument is that we learn the skills we need by doing the activities we are to master. In this perspective on knowledge and learning, practice is not perceived as a mechanical area to be enlightened by theoretical school knowledge. Practice as a learning arena possesses its own knowledge forms with specific and adequate learning acquiring forms.

The new renaissance discourse is not really a renaissance of the classical apprenticeship model as such (although in Aristotelian times, this was probably the prevailing model). Apprenticeship is still the essence of VET in its dual form

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<sup>4</sup>For an in-depth analysis of the theory-practice knowledge conceptualisation in Aristoteles, see Saugstad (2002).

in countries from Switzerland to Norway, where most of the learning takes place based on a contract between the apprentice and a company and where the apprentice receives a salary for his contribution to the production. The 'renaissance' is partly based on the fact that educational science has become aware of apprenticeship as an attractive form of learning and partly on the modern changes in working life which leads to expectations of learning 'in practice' at the workplace. In recent years, there has been a considerable theoretical and conceptual development based on studies of different work-based learning forms. This development is obviously of great relevance for VET.

In Denmark, for instance, alternance-based VET programmes represent a modernised form of the traditional apprenticeship training with roots back in the Middle Ages. In recent years, changes in working life, economic life and culture have created new competence and qualification needs. Now, greater emphasis is laid on flexibility and core competences, and ability and motivation to learn; this also means an increased emphasis on (self-guided) learning rather than on teaching. It is against these major societal changes that apprenticeship or work-based learning has again come into focus as part of the development of the new learning concept, e.g. in new concepts such as 'the learning organisation', 'lifelong learning', learning in 'communities of practice', 'situated learning', 'legitimate peripheral participation' and 'the reflective practitioner'.

## Research Findings

The argument developed here is that a careful analysis of learning potentials in the learning landscapes of work can give guidelines for VET reforms in EU as well as in transition countries. There are in fact two discourses intertwined here. We cannot just jump from the learning landscape thinking in advanced countries and try to implement such a model in transition countries, where VET is almost everywhere school-based.

However, we can in any country start to analyse company training and VET school education as separate learning arenas and argue – based on Aristoteles' (1995) understanding of knowledge and learning – that many problems inherent in the school-company interplay are caused by the fact that these two learning landscapes are fundamentally organised very differently. Therefore, the effective and strong dimensions of learning organised based on a 'production logic' are worthwhile developing. VET school education cannot deliver all competences needed for the labour market. Instead of the usual didactic efforts to streamline school-company interplays, the strong dimensions of each side should be further developed.

Craft, as Sennett sees it, belongs to the category of 'social capital' (Bourdieu 1992): knowledge and skills that are accumulated and passed on through social interaction, and which are easily lost when social customs change. Social capital

of this kind is an example of what Michael Polanyi called ‘tacit knowledge’: knowledge that exists in a social practice, but is not detachable from it, like the knowledge of the human heart that is contained in the practice of good manners. Such knowledge confers authority on the person who possesses it.

An analysis (Kvale and Nielsen 2003) of different types of learning alternating between schools and companies sum up the strengths of school and company learning, respectively:

It becomes clear that learning in this perspective is much broader than today’s scholasticism where learning is primarily connected with theoretical studies. Learning is also related to development of a vocational identity, acquiring of responsibility, coping with (also routine) work tasks as they come and broader socialisation both in broader terms as well as to the concrete workplace layout and tools/machine systems. First and foremost, learning concerns how to become a specific type of person, a carpenter, a baker, an electrician, etc. Schools are good at providing ‘spectator’ skills while companies are good at providing ‘participant’ skills. Both learning arenas are needed.

Workplace learning processes are often relatively invisible. Carrying out a work task is often perceived as doing a daily routine without being associated with any learning. Imitation of others and the identification with more experienced practitioners in the community take place without having been deliberately intended or planned. Dreyfus and Dreyfus (1986) have underlined the importance of such routines and repetitions for the ability of practitioners to act flexibly in complex situations. Creative forms of learning are not enough; reproductive learning forms are important also today if an apprentice is to be able to perform complex work tasks.

It is a paradox that workplace learning, often involving to get up early in the morning to carry out tedious manual work with a risk to get harsh reprimands, is highly preferred by apprentices in dual VET systems compared to the immediately much more comfortable school-class learning where one can sit comfortably in one’s chair listening to the teacher talking in a nonthreatening atmosphere. There is consequently also a strong student motivational reason why VET systems in transition countries could capitalise on learning from dual VET systems.

The learning topographical approach and flexible organisation, which individualise learning pathways, have important implications for the design of the ‘didactical room’, a widening of which could probably be a first step in transition countries. The concept of a ‘didactical room’ implies openness towards alternative possibilities of organisation and design of programmes that are innovative compared to the traditional school from the days of industrialism.

A new strategy for VET reform in transition countries could therefore focus on reorganising the school workshops with local employer support, as a next step towards bringing the renaissance of apprenticeship and the landscape of learning thinking forward. Cornerstones for such initial and not too costly reform initiatives could be the following.

In many transition countries, VET is organised in subjects; the contents and goals of basic technological subjects are mostly described by the basic laws of the natural sciences in their relation to basic technology. This is not useful for the labour market. The technological descriptions of the functions and structures of basic machinery often miss the relevance to modern technological systems.

In most cases, students have a week- or month-long practice in a company. This practice is not sufficient to understand the world of labour, but it could be very helpful to analyse its organisation and to transfer good practice into school workshops.

Between schools and local companies, there often exists a traditional network. This network is based on individual contacts between directors of schools and companies or between teachers and local companies to get jobs for students. Societal institutions only die slowly, and there are some opportunities to re-establish links with the companies, of special importance is to widen networks to include small- and medium-sized companies.

There is a sharp division between theory and practice, between classroom and workshop and between VET teacher and trainer functions. But this division is more harmful to students' competencies than the reduction of practical experience if teachers, trainers and students do not learn to combine technological theory and the labour process with the actual functioning of machines and tools. What is needed in most transition countries is a new configuration of teaching, learning and practical work exercises.

### **What VET Schools Can Give Students/Apprentices**

- Broad introduction to general knowledge in a vocation
- Time for reflection and deeper studies of a profession
- Time and space for explanations
- Reflection on work experiences of apprentices
- Maintenance of marginal techniques and skills within a vocation

### **What Companies Can Give Students/Apprentices**

- Training of routines and a 'feel' of the profession
- Genuine responsibility for production
- Vocational role models
- Highly specialised skills and knowledge about front-edge technological change
- Establishment of vocational/professional networks

## Conclusions for VET Research and Practice

Based on the analysis above, this chapter draws two lessons for establishing guidelines towards a more open VET architecture in countries in transition and one conclusion related to a new and rich research field for VET.

*Pragmatic guidelines for a more open VET architecture in transition countries:*

1. Learning inspired by the actual developments of learning theory and the ‘renaissance’ of apprenticeship can be organised in learning arrangements in countries of transition in VET school workshops enabling the work-based or logic of production approach to be operationalised in practice. This is the most realistic innovation strategy for most transition countries.
2. Re-establishing apprenticeship in ETF partner countries in a modernised form of the classically regulated tradition of the guilds will require fundamental organisational and societal changes to avoid the obstacles mentioned in the three cases which introduced this chapter. Components of the apprenticeship system in modernised forms could be a potential strategy and would probably profit more from contemporary examples of modern apprenticeship in countries like Finland and the UK<sup>5</sup> not bound by the burden of long cultural and historical lines. Such reforms would have a positive impact on education system transition and transmission and is therefore worthwhile to invest in.

*Intensified VET research on the landscape of work-based learning:*

3. In the domains of educational and psychological research on learning, the learning resources existing within working life have only been scarcely researched. Educational science is mostly targeted at organisation of teaching and learning arrangements in schools, and psychological research has focused on individual learning processes. Learning theory has been preoccupied with finding universal laws on learning and with formulation of theoretical models for learning. The multifarious aspects embedded in the concrete situations where learning takes place have only been cursorily studied. When researchers have had only a limited interest in the ecological resources in the landscape of learning, one explanation is undoubtedly that pedagogical and psychological learning research for a long time has been dominated by rigorous demands on experimental design and quantification.<sup>6</sup> Interviews with participants in communities of practice and qualitative observations from their practical work contexts, which may open up for a coherent understanding of learning, have been perceived as not really important.

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<sup>5</sup>See for instance the initiative ‘An Apprenticeship’ which was formed to offer a unique reference point on advice on being or employing an apprentice. <http://www.anapprenticeship.co.uk>

<sup>6</sup>Maybe it has become too ‘evidence-based’?

The empirical study of learning resources and barriers in work-based learning must be upgraded. It is necessary to question the more formalistic concept of learning based only on schooling that dominates the educational research and discourse. By describing, conceptualising and comparing nonformal learning forms, a systematic research effort on practice learning may contribute to deeper and overarching reflections on the rich learning resources offered in work-based learning. A new research agenda should tone down the focus on the individual learner and concentrate on studies of resources for learning which are found in workplaces and in communities of practice. The concept of the 'learning landscape' (Nielsen and Kvale 2003) may serve as a spatial metaphor for the practical and concrete understanding of the workplace: the workshop layout, work tools, machine systems, work organisation, etc.

The knowledge accumulated by this research interest will not least be of particular importance for the competence development of trainers in VET. They will probably acquire an increased role in organising learning processes and environments at the workplace. It is also important for the development of the substance and modalities of the 'renaissance of apprenticeship' (Nielsen 2009), an interest which appears to be observable in many countries.

## References

- Ainley, P., & Rainbird, H. (1999). *Apprenticeship: Towards a new paradigm of learning*. London: Kogan.
- Aristoteles. (1995). *Nichomachean ethics* (Loeb Classical Library). Cambridge: Harvard University Press.
- Bourdieu, P. (1992). *Outline of a theory of practice*. Cambridge: Cambridge University Press.
- Dreyfus, H. L., & Dreyfus, S. E. (1986). *Mind over machine. The power of human intuition and expertise in the era of the computer*. Glasgow: Basil Blackwell.
- Nielsen, K., & Kvale, S. (Eds.). (2003). *Praktikkens Læringslandskab. At lære gennem arbejde*. Akademisk Forlag.
- OECD. (1998). *Pathways and participation in vocational and technical education and training*. Paris: OECD.
- Rauner, F. (2007). Vocational education and training – A European perspective. In A. Brown, S. Kirpal, & F. Rauner (Eds.), *Identities at work* (UNESCO-UNEVOC Book Series Technical and Vocational Education and Training, Vol. 5, pp. 115–145). Dordrecht: Springer.
- Saugstad, T. (2002). Theory and practice in an Aristotelian perspective. *Scandinavian Journal of Educational Research*, 46, 373–390.
- Winther, S. J., & Taylor, S. L. (1996). The role of IT in the transformation of work: A comparison of post-industrial, industrial and proto-industrial organization. *Information Systems Research*, 7, 5–21.
- Sennett, R. (2008). *The craftsman*. New Haven: Yale University Press.
- Kvale, S., & Nielsen, K. (2003). At lære et fag i vekselspillet mellem skole og virksomhed. In K. Nielsen & S. Kvale (Eds.), *Praktikkens Læringslandskab. At lære gennem arbejde*. Akademisk Forlag, København.
- Nielsen, S. (2009). A renaissance for apprenticeship learning? – And its implications for transition countries. In F. Rauner et al. (Eds.), *Innovative apprenticeship. Promoting successful school-to-work transitions*. Berlin: Lit Verlag Mag. W. Hopf.

# Chapter 8

## Work-Based Learning in China

Ludger Deitmer, Joanna Burchert, and Xu Han

### Introduction

Because of the dominant orientation of parents towards higher education, the academic track in China is dominating upper educational system. In respect to that, consequently the vocational track was falling behind. This development is changing at the moment, and VET is receiving higher attention at the side of the government. Also under a formal perspective, the vocational track has become in 2002 a politically accepted system pillar. But still, vocational education in China has a clear focus on full-time schooling and tremendous deficits on work-related skills and knowledge. The students spend too much time in the ‘magic triangle’: the class room, the in-service training laboratories and in the boarding house. Nowadays, increasing attention is brought up towards students’ presence in enterprises.

The main focus of the current Chinese vocational education reform is to improve embedding work-based learning in the VET System. The background of these efforts is the increasing demand for better-skilled workers. There is rising need for worker who can take part in different stages of the production process. This means the inclusion of them with control and planning of their own work tasks. But such kind of teachers cannot be taught in traditional, teacher-centred teaching style and within schools who do not cooperate with their school environment, primarily to companies. Under Chinese experts, it is known that this can be best learned in a

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real production environment. This would mean such an environment which allows learning alongside customer orders. In the following, we enrol three pathways to connect working and learning better.

## **Three Paths Connecting Work and Learning in Chinese VET**

Looking at the embedding of the didactic principle of a work-process-oriented vocational education in the Chinese system, three trends can be distinguished: alternating duality, establishing vocational training centres and ‘production schools’ or school-based practice companies.

### ***Alternating Duality***

The Chinese model of an alternating dual VET system in vocational schools<sup>1</sup> is characterised by two years of theoretical learning in vocational schools which are followed by one year of on-the-job training. The educational responsibility for the adjustment (on-the-job training) to the aspired profession lies at the vocational schools. Consequently, tuition fees have to be paid continuously (also in the 3rd year of vocational training) to the schools, respectively, to the public institutions.

The process of implementing the concept of the alternate dual educational training into practice is characterised by the following difficulties:

- Until now, vocational education lacks proper definition of job descriptions as well as examination regulations, which are necessary for the implementation of a curriculum in the third year.
- As a consequence, ‘learning by doing’ is subordinate to the economic interests in cheap labour that impede a more in-depth, systematic vocational training.
- Both teachers in vocational school as well as the responsible training supervisors in the companies are inadequately prepared for these tasks.

### ***Establishing Vocational Training Centres***

The national reform programme provides large resources for the establishment of vocational training centres in order to build up work-based learning as a part of vocational education.

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<sup>1</sup>In vocational and technical colleges, students spend 2.5 years in the college and half a year in companies.

Usually, vocational training centres are allocated to vocational schools. They are administered by local authorities, companies or vocational schools. Vocational training centres can be implemented without complicated coordination processes as part of state vocational training. Although they have high aspirations, vocational training centres run the risk to:

- Build up too much distance between vocational training and the job market
- Disentangle practical education from work processes and organisational development
- Enhance the drawback of companies from their original role in vocational training

### ***Production Schools and School-Based Practice Firms***

Chinese companies have a strong profit-oriented way of acting and in times of increasing global competition, this has led to the outsourcing of social and educational functions and responsibilities. This development has also a significant impact on the Chinese public sponsors of vocational and educational schools. In some provinces, especially where infrastructure is good and also heavy industry is settled, there is a huge demand of skilled labour and thus vocational learning tracks. These are mostly integrated in vocational schools. In this context, two reform concepts have emerged:

- *Schools with integrated production areas/‘production schools’*. Usually, companies and vocational schools support the build-up of production areas within schools according to the model of ‘production school’. Here, the approach of vocational education is very similar to the concept of work-based learning but nevertheless cannot completely substitute for it.
- *Practice firms*. In order to give insights into the working environment and to strengthen on-the-job training, vocational training schools set up (artificial) practice companies, where both industrial and office work can be simulated in a realistic manner. Established vocational disciplines and good equipment are required, in order to fulfil the conditions of handling realistic official offers. During this simulated work process, teachers take the role of project managers in the sense of company managers. This has the advantage that students get a deeper understanding of the problems related to working environments and work processes. To finally meet the requirements of a systematic integration of work assignments into a vocational curriculum, an integrated work-process-oriented didactic is needed.

## Reflecting Pathways in Their Emerging Effects

The concept of *alternating duality* ensures that apprentices are involved in the work process as well as in the process of organisational development. Vocational teachers are responsible to guide this learning process and to create an environment that supports trainees to reflect and communicate working conditions and experiences. But to become effective, this concept requires a legal-based teacher training and a more intense school-company cooperation.

The strategic aim of building up *vocational training centres* is to reinforce and improve on-the-job training, while, at the same time, it promotes a considerable drawback of companies from their original responsibility in apprenticeship. Only if vocational training centres are complementary to existing forms of vocational education, they could become an important element in the Chinese VET reform.

The establishment of *practice firms* and '*production schools*' is the result of initiatives made by vocational schools and their cooperation partners and leads to work-process-oriented learning. However, it cannot replace a system of dual VET. The increase of '*production schools*' also corresponds to the trend of the Chinese economic development, where companies tend to concentrate on their individual core businesses. Each of the three paths requires stronger cooperation between VET schools and companies, which are the potential future employers of the VET students. On the one hand, this is impeded by the companies' tendency to concentrate on the core business; on the other hand, cooperation is necessary to forward practical vocational qualifications of the students.

Many practical questions have to be managed by the schools trying to closer cooperate with enterprises because this cooperation strategy is rather young. Here, schools can be supported with network evaluation tools which help them to assess the quality of a partnership. The question is what kind of arrangements may help to develop a good cooperation practice of different actors involved in the regional VET network: teachers, trainers and apprentices. In the Quality Development Project,<sup>2</sup> the cooperative relationship between VET colleges and companies was evaluated by the 'evaluation of regional cooperation (ERC) tool'.

By mutual cooperation between the University of Bremen (Institute Technology and Education, ITB) and the Beijing Institute for Vocational Education (IVAE), intensive teaching and training on new methods on self-evaluation were launched at the side of different VET schools and colleges of Beijing area. The method used to evaluate these cooperations was the ERC tool which is described in the following chapter.

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<sup>2</sup>The Quality Development Project took place from 2008 to 2010 in Beijing and at the Beijing Academy of Educational Sciences within the Competence Develop Programme targeting at the competences of VET teachers for school development, curricular design for work-based learning. The IVAE commissioned the ITB, namely, Joanna Burchert and Ludger Deitmer, to introduce German and Swiss quality management systems including elements like understanding and doing self-evaluation and external evaluations, learning feedback, developing a mission statement and steering the school development processes.

## The Evaluation of Regional Cooperation (ERC) Tool

First, some words about the theoretical background and conceptual understanding of these tools are triggered by our belief that a new era requires also new tools and methods within close context with the further development in China.

The new paradigm is called empowerment evaluation: ‘...*the use of evaluation concepts, techniques, and findings to foster improvement and self-determination*’ (Fetterman Kaftian, p. 3). This approach can be applied in contexts, in which learning is seen as central, e.g. in public-private partnerships (PPP) like companies and schools that form innovative cooperation networks for mutual benefits. One conclusion which can be drawn from such collaborations is that they cannot be organised or managed traditionally. Such formations have to be organised and managed in concordance with their essential qualities and traits. This was the starting point for the development of a new tool for self-evaluation of collaboration formations<sup>3</sup> in a European project (Hofmaier 2009).

The approach is conceived as appropriate for such collaborative formations where self-determination and learning are seen as central. In the European project COVOSECO, the term *empowerment tool* was used, and the tool was developed and tested in five European countries. The conclusion from the development of the evaluation tool was that its usefulness for PPP’s or networks should start from the following principles (Deitmer et al. 2009):

- *Participation* – by sharing the evaluation work in all phases of the evaluation, legitimacy and identification with the results are guaranteed. Differences between individual participants and the network as a whole can be used for steering.
- *Discursivity* – the evaluation process is based on dialogue principles which permits to counteract misunderstandings but can also be used for mirror effects, e.g. reflecting different positions and arguments.
- *Reflexivity* – through the discursive design of the evaluation workshop, the emphasis is also on reflexive learning. Participants are interpreting and make reflections about strengths and weaknesses of their own process. The results of the learning process can contribute to new orientations, reframing of the strengths and weaknesses and lead to the direction of joint and individual project goals. It also contributes to increase the internal capability for managing their work.
- *Multiple perspectives* – viewing and analysing central elements of the evaluation subject from a plurality of perspectives is a way of reducing the risk of erroneous interpretations.
- *Sustainability* – the aim of the evaluation is to create and support sustainable structures for innovation activities, e.g. to support the network’s own dynamic over the limited project time, improve the innovation competence and improve the milieu for innovations.

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<sup>3</sup>This tool was developed in a European project (2001–2004). See the final report.

## ***The Customisation of the Evaluation Tool Towards School Networks and Innovative School Development***

ERC tool is based on a focussed group discussion with representatives from schools (teachers, school managers, etc.) and local companies (managers, trainers, etc.). In an evaluation workshop, key actors from both sides are meeting each other and undertake a moderated dialogue on key success criteria of the cooperation. This enables and stimulates the public and private actors to describe, reflect and access their practical cooperation situation. To follow such assumption, the evaluation design follows therefore two principles:

- Both school and company partners can express their individual rating of the quality of the cooperation and jointly discuss how well the actual cooperation between company and school works according to certain criteria (see below).
- In order to provide a fair and transparent evaluation session, an external moderator team is active. The moderator's role is to implement the self-evaluation process in a systematic way and to moderate the discussion in such a way that all persons can express their wishes, needs and assessments.

Altogether, an evaluation session using this tool may last 4–5 h. The most important design element of the ERC tool is a criteria-based questionnaire. The criteria were selected on the basis of innovation research literature and by discussing the criteria in teachers' training.

They have five topics: goals, management, partnership development, effects and dissemination.

### **Goals of the Cooperation (1)**

The goals of a network may not be completely defined at the beginning of the partnership, but a good mutual understanding of and agreement on goals are crucial for the success of the cooperation. Sub-criteria here are whether the collective and individual goals are clear and realistic and receive support by the management of both the school and the enterprises.

### **Organisation and Management of the Cooperation (2)**

This criterion looks at the different types of resources that should be available to a partnership between schools and enterprises. The process of managing the partnership is divided into three sub-criteria: clear allocation of tasks, fair distribution of work and clear rules and procedures. The effectiveness of internal and external communications is also evaluated here.

### **Development of the Cooperation Partnership (3)**

This criterion is covering aspects which are necessary to guarantee a good process of the cooperation programme. It covers the development of trust which should allow the ability to agree on an effective cooperation and also a continuous improvement of the cooperation during the partnership.

### **Effects of the Cooperation: Students' Skill improvement, Teachers' Competencies and Enterprise Benefits (4)**

This criterion includes the following sub-criteria: encouragement of student and teacher learning and improvement of innovation competences. Good internal communication is of crucial importance to overcome barriers and warding off uncertainties. As innovation processes are learning processes, actors in a learning partnership must be willing to share their knowledge and learn from each other.

### **Dissemination of the Cooperation Practice and Further Development (5)**

This criterion focuses at the attractiveness of the cooperation model and whether it can stimulate interest also from other regions and schools as well as from other companies.

To look at evaluation from the learning point of view seems a bit trivial at first glance – evaluation aims at analysing strengths and weaknesses of a project or organisation and at opening up perspectives for improvements. Even a purely summative evaluation that consists in a benchmarking exercise shows potentials of change and thus aims at learning of the actors and stakeholders involved. So, we do not claim that some evaluation methods (say, e.g. formative ones, operating with qualitative data) will derive better learning effects per se. It simply depends heavily on what is called for by the ones commissioning an evaluation. And there may be a lot of unintended learning effects for the actors, even if the commissioners of an evaluation (e.g. a controlling body) did not have them in mind. Patton (1997) uses the term 'process value' to describe these effects – the actors' perception that by undergoing evaluation, they learn to look at their own project or organisation from an evaluator's point of view, and this way find out many aspects about it that previously were (if even) tacit knowledge.

## ***The Implementation of Self-evaluation Tools in the Chinese School Development Context***

The ERC tool was applied in several technical colleges in Beijing to provide hints on the cooperation practice of schools and companies. This happened in the framework of the Quality Development Project in the years 2008–2010. The findings of this analysis are presented in the next chapter. Here we shortly reflect why we think that such methods are very relevant for the Chinese school development and why it can be received as a new part teacher's further training.

There were always two basic approaches to introduce an innovative change: a top-down approach based on indicators, measurement and sanctions and a bottom-up approach that combines assessment with supporting measures of empowerment (cf. Kettl 1998). Both approaches have their values and logic; it is said that both approaches should be practised.

China is a country which is facing fast changes – but actors sometimes cannot cope that fast. Schools are dominated by their leaders, and control of teachers is stronger than in Western schools. This kind of leading favourites measurable results and effects. The process of development with the effect of strengthening the commitment and self-responsibility of teachers is often too little recognised.

The dynamic opening up of the Chinese business economy paves the way for different leadership styles – including more participative – which is beginning to delegate more responsibilities to school managers and teachers. By the Beijing Competence Development Program (CDP 2007) and others, the need for teacher training in these more collective approaches are recognised. More participative governance patterns and work forms get into discussion. China has increased needs for a new type of worker – the craftsman. A craftsman is able to plan his work more autonomously; he is able to do different work tasks and undertakes self-control. Therefore, more team-like and semi-autonomous learning forms are getting into use. Teacher training favourites more knowledge and practical skills about project development in teams including work-based learning and new student-oriented teaching styles. The example of this ERC tool here can meet the needs into participation and dialogue orientation within school development. These support and learning strategies help to support bottom-up approaches instead of the top-down model (Deitmer et al. 2003, pp. 137–170).

## **The Cooperation of VET Schools and Companies**

In a one-day evaluation workshop at the school premise, representatives from a technical college (school directors and teachers involved in the company cooperation), another college and representatives and managers from three cooperating IT

companies met. The meeting was hosted and moderated by a TVET Institute (IVAE) at the Beijing Academy of Educational science (BAES). The intention of this (self-) evaluation meeting was to evaluate the current cooperation situation and the status of cooperation improvement.

In the first step, a process of weighting (0–100%), the more points, the more important and assessing (0–10, 10 is best) of the criteria took place. In this chapter, we mainly refer to the discussion which followed the weighting and scoring.

**Weighting:** What are the most important criteria for the individual actor from school and enterprise?

The third and the fourth of the main criteria asking for the implementation and effects from the cooperation activity under school and enterprise partners were weighted as the highest (30%) and on the same level; the other three criteria are between 12% (criteria on *goals* and *dissemination*) and 16% (criteria on *management of the cooperation*). All actors see the execution and the immediate results from the cooperation plan as the most important ones. The basic aims of the cooperation seem to be rather clear to everybody at the table, while the project is already running for 3 years.

**Assessment of Criteria:** How good have the criteria been met by the actors?

When we look at assessment of these criteria, the scoring results are much higher for the first two criteria, whereas criteria 3 and 4 are seen as much more critical. The dissemination criterion is scored lowest and is not in the focus of the cooperation activities under both the school and company. Therefore, we like to look at criteria 3 and 4 which vary between 5 and 8 points on a scale from 1 to 10. Somehow quite satisfactory but the opinions on how good the plan progression differs quite considerably.

The teachers regarded the cooperation as more critical (scoring figures around 5) than the external evaluators (around 6 to 7) as well as the companies (which are the group with the most positive scores by not less than 7 points).

### ***Reflections on the Cooperation Practice***

The teachers see time resources as critical as well as that the cooperation plan is not well understood amongst all teachers. Motivation is lacking: while teachers see the extra efforts they have to deliver, possible benefits remain unclear. For the companies, it is not always clear who can decide something in the schools, decision-making can be slow, and a good understanding about industrial practice is sometimes lacking. There is a necessity for them to invite teachers for more visits into the companies to study the workplaces the students will have to work on and suggest also internships for the teachers.

The costs are problematic as well, because such a work-based learning approach is much more expensive than teaching by books in the classroom as the preliminary

orientation for teachers and students. It gets clear in the discussion that such a plan is cost-intensive, while in every area, new ways are taken which sometimes result in more work and time invested to find out the best way for the cooperation.

### ***Chinese Reflection on This Evaluation Approach***

The Beijing Polytechnic College used the evaluation concept to evaluate their project-based cooperation activities undertaken with local industries. It showed up that the criteria used with the method must be well understood by all evaluators and that it may take time to discuss them.

During the evaluation, all participants shall have the time and freedom that everyone can express his position and the reasons for his individual scoring. This should happen openly without fear of punishment. This is seen as the democratic part of the tool, and in any case the moderator has to make sure that there is enough time given to explain the notes and to deliver the evidence why the cooperation works or not.

The participants using ERC tool also reflected that the evaluation results shall be systematically analysed. This may take all the different viewpoints taken into account to perceive a deep understanding for the functioning of the cooperation of enterprises and school.

Also the evaluation seminar taken place at BITC (2009) reflected on the value of the ERC for identifying strength and weaknesses in their cooperation.

In their reflection about ERC, the colleges came to the conclusion: 'By using ERC methodologies we as teachers moved from an object of evaluation to a subject of evaluation'. It seems as if this participative evaluation method can support the motivation of all project stakeholders to introduce criteria carefully and that there is enough time to communicate about scoring results and the reasons behind the figures and to support cooperation plan.

What is still difficult in using ERC tools?

1. Based on the experiences of other applications of such participative tools (Deitmer and Heinemann 2009), it is necessary not to forget the third step of the evaluation process of ERC Tool. The material is analysed, and the moderation team should hold a perspective meeting (the third step of the process) in which the results from the workshop are presented and discussed to develop a valuable counterstrategy steps to overcome the deficits and dysfunction within the cooperation.
2. The documentation of the evaluation session shows us that a lot of the suggestions for improvement and identification of malfunctioning elements are made more or less rather general and sound a bit abstract like: *We need to complete the teachers training plan and enhance teachers' practice skills and new teaching method the training. Change teachers' way of thinking to promote the education mode carrying out according to the complete work process in the study field, or*

similar another expression of that kind: *We need to perfect and better plan the entire program, and to push forward the entire cooperation system as a whole to raise the effect of cooperation between school and enterprise* (BITC 2009). There is the danger that with an extensive list of more general recommendations, no measures will be realised.

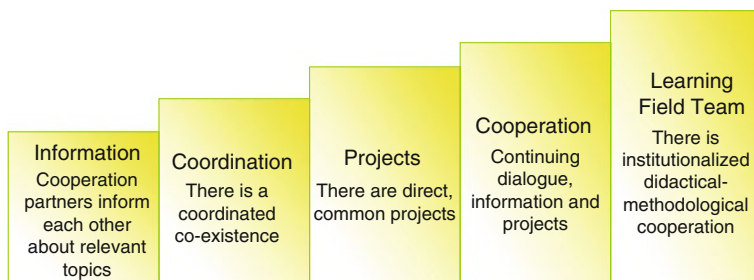
## Conclusions for VET Research and Practice

Taking everything in consideration, the prevailing constraints in the Chinese VET system, vocational education in China is still less attractive and accounts for its social stigmatisation.

As a strategy of reform, it would be necessary to qualify teachers and trainers in order to implement a systematic and well-structured vocational training programme on the basis of a stringent concept of vocational curriculum design. In order to implement such a concept, the further development of the kind of ways schools and companies are working with each other is necessary.

The improvement of cooperation requires efforts from both sides: companies need to explain which competences they expect new workers (who graduated in the VET schools) to have. They should support teachers in learning the techniques applied in the companies, so those teachers can provide this knowledge to the students. Companies as well as schools should define transparent and stable contact persons. On a deeper level, they should also discuss each other's roles: in the German dual system of VET, e.g. it is clear that schools provide the theoretical part of education, while companies do the practical part. In China, sometimes the impression derives that VET schools do education which is ignored by the companies, because the companies have their own qualification process. Also some companies seem to be afraid to show with which technologies they work, even to school teachers. It is important to provide concepts to translate working tasks into learning tasks, so teachers know how to use the experiences made in companies. The teachers' efforts in this field should not be regarded as 'private pleasure', but as a part of the school's teaching development. This means, that the teachers who go to learn in companies need time and tolerance. To enhance organisational learning, they should also have the possibility to share their experiences with colleagues. The adaptation of newer evaluation approaches can help to clarify the learning dimension within partnerships between industry and VET schools.

But also cultural and political aspects need to support the turn towards more cooperation. Companies have to learn using a long-term perspective and to regard education as first step towards working quality. The cooperation between schools and companies now focuses on frameworks, while deeper involvement of the companies is necessary. National or regional *regulations* should support this movement, so the cooperation does not only rely on fragile personal relations.



**Fig. 8.1** Sloane's model of VET school and company interaction

### ***Ambitious Cooperation: Teaching as a Learning Field Team***

But what does cooperation between schools and enterprises mean exactly? Peter F. Sloane<sup>4</sup> sketched a development model of cooperation between vocational education venues (Fig. 8.1).

In this model, the most distant relationship between VET schools and companies is 'information', which simply includes informing each other about basic topics. The closest cooperation is a stable, institutionalised 'learning field team', which develops common curricula and shares the responsibility for the education's success. Learning field teams have a thoughtful task division: good practice here would mean that the learning processes at school should deepen the practical learning experiences at the workplace in industry, service or the craft trade company. Systematic and theory-based knowledge should help to better understand the practical dimension of learning at the workplaces. In Germany, there was a broad political debate on learning fields with the effect that the responsible state bodies (here the county ministries for education) wanted to improve the collaborative dimension by changing the curriculum concept by introducing work-based learning as a key element for both the schools and enterprises. The vocational disciplines of the profession (e.g. for the field of the merchant, business administration, bookkeeping, law and correspondence) are based on work and learning tasks which depart from learning situations to be found at the workplaces in industry or commerce. This curricular model should give the apprentice a more coherent and holistic understanding of what he can learn at work and how learning at school can complement this. The apprentice shall get a deeper theoretical and practical insight into his or her professional field and a better understanding of the theory and practice of his vocational discipline. This complex change of learning and teaching obviously requires the establishment of stronger interaction between workplace experiences

<sup>4</sup>Sloane 2003; unpublished presentation at the regional final conference of WISLOK project in Kassel, 26.6.2003. Cited from the LENE project report: <http://bbne.bibb.de/dokumente/pdf/abschlussbericht-lene1.pdf>

and systematic, theory-based learning at school. Such a reform is complex and has many implications not only on curricula but also on other levels like the organisation of schools. What is learned in the classroom shall get into closer contact with what is learned in practice, or in other words, learning in the classroom shall enable the apprentice to take a much closer relationship to his company's real work tasks and business processes. Learning for and by problem-solving instead of following textbooks is part of this approach. The intention of this reform is to strengthen the capabilities of the apprentices, so they can perform better in their professional area.

Curricula of that kind have not only affected on the redesign of the curricular frameworks but affecting also the professional development of trainers and teachers. The teaching and training staff has to understand how to handle this new method of learning and teaching. Learning situations have to be identified and developed out of the work process, i.e. one has to identify what the potential work task offers for learning and how these tasks can be arranged into a curriculum.

A major challenge for this reform is the creation of active, trans-institutional teams of teachers and company trainers. In these teams, both partners must identify the integral work and learning tasks in the occupational profile. They have to organise the knowledge flow and the swing of theory and practice in between them. Therefore, the reform is not just a new pedagogical process but also an institutional and personal transformation. To be equipped for this, the schools have to move from being traditional vocational education schools into regional centres for initial and continuous work-based learning. More autonomy and adequate resources for the regional training and development centres which foster regional learning in networks (network learning approach) is an answer to this.

The implementation of work-based curricula requires a revolution in traditional Chinese education which focused on theoretical and general knowledge. Up to now, students in vocational education learn on the one hand general subjects: Chinese, politics, mathematics, foreign languages, sports, physics and chemistry. They were not connected to the workplace practice. But also vocational subjects were determined by scientific logic. Each vocational major includes ten special subjects which are hardly referred to vocational practice. Vocational theory remains 'gray theory' so that students need a lot of time to adapt to the working world. Under this perspective, the movement towards more learning field teams with VET schools and companies is one of the most urgent challenges in China.

## References

- Beijing Information Technology College. (2009). *The participative evaluation meeting report on the cooperation between school and enterprise for the information technological teachers training bases in Beijing Information Technology College*, Beijing unpublished manuscript.
- Burchert, J. (2010). *Innovationsfähigkeit und Innovationsbereitschaft an Beruflichen Schulen* (ITB-Forschungsbericht Nr. 44). URL: <http://elib.suub.uni-bremen.de/ip/docs/00010687.pdf>
- CDP. (2007, January). *Beijing Municipal Commission of Education and Finance Bureau of Beijing, document on the implementation of Competence Development Project (CDP) for teachers in Beijing Vocational Institutions*.

- Deitmer, L. (2009). Programme evaluation. In F. Rauner & R. McLean (Eds.), *Handbook of vocational education research*. Dordrecht: Springer.
- Deitmer, L., & Heinemann, L. (2009). Evaluation approaches for workplace learning partnerships in VET: How to investigate the learning dimension? In M.-L. Stenström & P. Tynjälä (Eds.), *Towards integration of work and learning: Strategies for connectivity and transformation*. Dordrecht: Springer.
- Deitmer, L., Davoine, E., Floren, H., Heinemann, L., Hofmaier, B., James, C., Manske, F., Ursic, D., Turner, L. (2003). *Improving the European knowledge base through formative and participative. Evaluation of Science-Industry Liaisons and Public-Private Partnerships (PPP) in R&D*. In: Final Report of COVOSECO thematic network project, EU STRATA 5th framework programme. Bremen: University of Bremen.
- Deitmer, L., Heinemann, L., & Mingying, X. (2009). Co-operation of school and enterprise: The case of BITC Beijing. In F. Rauner, E. Smith, U. Hauschildt, & H. Zelloth (Eds.), *Innovative apprenticeships. Promoting successful school to work transitions* (pp. 177–181). Berlin: LIT Verlag.
- Fetterman, D. M., Kaftarian, S. J., et al. (Eds.). (1996). *Empowerment evaluation. Knowledge and tools for self-assessment and accountability*. London: Sage.
- Greiner, W. D. (1994). *The German system of vocational training. History, organization, prospects*. Baden-Baden: Nomos.
- Han, X. (2004). *Berufliche Grundbildung im Spannungsverhältnis von Wissenschafts- und Arbeit-orientierung in Deutschland und China*. Aachen: Shaker Verlag.
- Herong, G., et al. (2005). The research and practice of “order-oriented” vocational education mechanism. *Vocational and Technological Education*, 4, 34–36.
- Hofmaier, B. (2009). An evaluation tool for practice-based learning (PBL). In L. Deitmer, L. Lassnigg, S. Manning (Eds.) *Proceedings of the ECER VETNET Conference 2009. Papers presented for the VETNET programme of ECER 2009 “theory and evidence in European Educational Research”* in Vienna, 28–30 Sept 2009.
- Jie, G. (2007). The history and practice of work-integrated learning of vocational education in China. *Communication of Vocational Education*, 2007(3), 26–28.
- Jintu, Y. (2005, June 22–23). Chinese education: Lagging behind while striding forward – On educational environment for developing vocational education. In: *Proceedings of the Shanghai education forum* (pp. II-12-2–II-12-12). Shanghai, China.
- Patton, M. Q. (1997). *Utilization-focused evaluation; the century text*. Thousand Oaks: Sage.
- Pätzold, G., & Walden, G. (1999). *Lernortkooperation – Stand und Perspektiven*. Bielefeld: Bertelsmann.
- Rauner, F., & Zhao, Z. (2009). Berufsbildung in China. In B. Stiftung (Hrsg.), *Steuerung der beruflichen Bildung im internationalen Bereich*. Gütersloh: Verlag Bertelsmann Stiftung.
- Rauner, F., Wolfgang, W., et al. (2009). *Steuerung der beruflichen Bildung im internationalen Vergleich*. Gütersloh: Bertelsmann.
- Sloane, P. (2004). The application transfer between Schools and Enterprises in the German Dual System: Putting it into practise. In R. Mulder & P. F. E. Sloane (Eds.), *New approaches to vocational education in Europe – The construction of complex learning-teaching arrangements*. Oxford: Symposium.
- Vocational & Adult Education Department of Ministry of Education. (2006, March). *The Ministry of Education’s Opinion on the Trial Regulation of Work-Integrated Learning and Part-Time Job in Vocational Schools*. The Vocational & Adult Education Department of Ministry of Education 2006. No.4.
- Zhao, Z. (2003). *Berufspädagogen in China auf dem Weg zur Professionalität, Reihe Berufsbildung, Arbeit und Innovation*. Bielefeld: Springer.

**Part II**  
**Competence Measurement and**  
**Development**

# Chapter 9

## Occupational Identity in Australian Traineeships: An Initial Exploration

Erica Smith

### Introduction

Apprenticeships and traineeships form a ‘success story’ for Australian vocational education and training (VET). 415,000 people, 3.8% of all Australian workers, were employed as apprentices or trainees as at December 2008, compared with 2.5% in 1998 (National Centre for Vocational Education Research [NCVER] 2009). Traineeships are more recently established than apprenticeships, often in different types of occupations and in newer industries, although sometimes in the same industry area as apprenticeships. While most are at the same qualification level as apprentices (Certificate III), the period of training is usually about half of that for apprentices. While trainees are now more numerous than apprentices, by a factor of about two to one (NCVER 2009), the sense of occupational identity appears to be less than that in traditional apprenticeships. This chapter examines the notion of occupational identity in traineeships using two case studies that were undertaken as part of a research project on high-quality features in traineeships.

Why is this topic important? Since so many Australians (about a quarter of a million from a working population of around 12 million) are involved in traineeships at any one time, it is clearly important that traineeships not only develop occupational skills but also an identification with their occupation and a propensity subsequently to utilise their skills in the same or related areas. The reputation of the VET system rests to no small extent on the success of traineeships, because of the large numbers involved, and it may be surmised that people will appreciate and affirm the training they have received more if they identify strongly with the job which they are learning. Employers are likely to remain involved

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with the VET system if they develop a motivated and committed workforce as a result of participation in the traineeship system. Finally, as will be explained in more detail below, the traineeship system is constantly under attack from those wishing to promote the interests of traditional trades, and the relatively low level of occupational identity formation in traineeships leaves the system vulnerable to such attack.

## Research Problem

In the Australian VET system, apprenticeships and traineeships are very important. They account for about one-quarter of the 1.6 million annual enrolments in VET qualifications (NCVER 2007). VET qualifications are gathered together into around 80 occupation-focused competency-based 'training packages'. Apprentices and trainees, unlike in some other countries, are always employed; part-time workers and adults are eligible as well as young people in full-time work (Smith et al. 2009). They undertake formal training, which may be by attendance at a TAFE Institute (TAFE is the public provider) or a private registered training organisation (RTO) or may consist of formalised training in the workplace which is monitored and assessed by TAFE or another RTO. The government funds the formal training, providing money to the TAFE Institute or RTO selected by the employer under what is known as a 'user choice' system, and also provides employment incentives to employers, payable in two instalments: on the signing of the apprenticeship or traineeship contract and on completion (Smith and Keating 2003, p. 70).

About 15% of apprentices and trainees are employed through group training organisations (GTOs) which perform a type of 'labour hire' function with added pastoral care elements (Smith 2008). GTOs are sometimes part of umbrella organisations that also provide RTO and employment placement services. In some cases, these umbrella organisations also include enterprises providing goods or services to the public, employing more disadvantaged clients of the GTO or RTO who might find difficulty finding work in the open labour market. Other important stakeholders in the apprenticeship and traineeship include skills councils at national and State level, which develop and maintain the training packages for various industry areas and promote training in their industry areas, and the departments of national and State governments which fund training, and register and audit training providers.

The apprenticeship system grew from European traditions and was formally established with sets of qualifications in the immediate post-Second World War period. Traineeships, on the other hand, are relatively recent. They were established in the late 1980s as a result of a deliberate government policy to expand access to contracted training opportunities (i.e. apprentice-like arrangements) to a broader set of industry areas and to women, and to encourage employers to employ more young people in a time of economic recession (Kirby 1985); at that time, apprenticeships were only open to young people, and it was envisaged that traineeships would be likewise. The numbers of people in contracted training has grown considerably

since the advent of traineeships. The majority of traineeships are in areas where apprenticeships did not previously exist in Australia (e.g. retail, IT, business, aged care) and generally last for 12–18 months rather than the 3–4 years of an apprenticeship. There is an even gender balance in traineeships (females slightly outnumbering males), while apprenticeships are still predominantly male, with women employed in large numbers only in hairdressing.

There is a comparative dearth of scholarly work about traineeships; early work focused primarily on perceived poor quality of training and on some employers' abuse of the system in order to access funding advantages (e.g. Schofield 2000). A strand of 'anti-traineeship' literature persists which continues to discuss quality issues (e.g. Snell and Hart 2008), which still exist in some areas, despite many regulatory changes; in addition, a small number of Australian authors (e.g. Karmel et al. 2010) criticise traineeships because they provide training opportunities for other groups besides the teenage unemployed. They claim that traineeships were set up as a labour market programme and should not be seen otherwise. This strand of critique neglects two issues: that traineeships always had a skill development focus as well as a labour market focus and that apprenticeships have also always had this twin focus too. Authors critical of traineeships also continue the critique began by Schofield (2000) in attacking the subsidies that are available to employers for traineeships, while not offering a similar critique of apprenticeships (e.g. Karmel and Cully 2009). In short, traineeships are, in the Australian idiom, 'fair game' for extensive criticism, while apprenticeships are sometimes seen as being above criticism.

Much criticism of traineeships is undertaken by those from interest groups, such as trade unions, associated with the traditional apprenticeship trade and craft areas. The interests of these groups would be served by retention of incentives and funding only within their own industry and occupational areas, as happened before traineeships were introduced, rather than sharing them more equally among differing industry and occupational areas. Such interest groups often disparage the skills involved in traineeship occupations, although it could be argued that such views of skill are simply socially constructed (Smith 2004). However, there is also some evidence that some traineeships involve a relatively 'thin' curriculum (Smith 2002).

Other scholarly work, based on empirical research rather than on argument, focuses on the use which employers make of traineeship qualifications to lift their companies' quality standards (e.g. Smith et al. 2005; Booth et al. 2005). In such instances, companies employ large numbers of their operational workers as trainees; in some cases, being employed as a trainee is the only route to employment as an operational worker in the industry. These practices are particularly common in industries, such as meat processing and aged care, where it is traditionally difficult to attract and/or retain workers; offering qualifications through traineeships is seen as helping to make the employer an 'employer of choice' (Smith et al. 2005). However, trainees are not only present in these types of arrangement, they may also be employed in small numbers in small to medium enterprises, just as apprentices often are (e.g. Smith 2006).

It was felt that the concept of occupational identity may be helpful in understanding people's attitudes towards traineeships and particularly in understanding why some scholars and many public figures hold negative attitudes toward traineeships. As Valenduc et al. (2007) state, occupational identity is becoming increasingly common as a topic for study. Brown (2004, p. 245), referring to Dewey's work, describes occupational identity as a 'home' with psychological, social and ideological 'anchors'. He notes that while occupational identities may be fixed through history in some cases, individuals also have the opportunity to shape occupational identity either for themselves or for a group of workers. In his study of engineering workers, Brown (2004) noted that while some were firmly attached to the occupation, others were just 'passing through', while others found their identity primarily through their employing company. Brockmann (2010) suggests that, for apprentices, a sense of occupational identity is reinforced by their college tutors, but she finds, in the two countries in her study, that such reinforcement is quite different in different cultures. In an argument very relevant to apprenticeships, although less perhaps to traineeships, where a higher proportion of participants are mature people, Brown et al. (2007, p. 3) note that the concept of occupational identity is seen to have an important role in 'stabilising' young people's attachment to working life and society more generally.

This chapter uses the data from industry case studies in the cleaning area of the asset maintenance industry and in construction. These case studies were undertaken as part of a project which examined the features of high-quality traineeships (Smith et al. 2009). They provide examples of traineeships that have been developed in two very different areas: the cleaning industry has only recently developed a system of qualifications, while the construction industry has had a strong formal apprenticeship system since apprenticeships began in Australia (and long before that in Europe).

As explained below, the chapter focuses on a small part of a large national project. The project examined the features of high-quality traineeships, the effects of variables such as industry areas on these features and the replicability of such features. The analysis of the data used in this chapter asks the following questions:

- What sense of occupational identity exists in the occupations in which the two traineeships are offered?
- What factors affect the strength of occupational identity?
- What contribution does the presence of a traineeship have to the development and perception of occupational identity?

## Methodology

The research was carried out in 2008. The asset maintenance (cleaning) case study included telephone interviews with senior officers of a national employer association and a national trade union operating in the cleaning industry, an official

from a State skills council with coverage of the cleaning industry, the traineeship manager of a national commercial company that included cleaning among a range of services offered to other businesses, two staff from a group training organisation in Melbourne that as part of its operations employed disadvantaged people in a cleaning enterprise, the curriculum manager of the construction area<sup>1</sup> in a State TAFE system, and a curriculum manager of a large private registered training organisation with a broad clientele in the cleaning industry. In addition, a face-to-face case study was carried out within a small cleaning firm in a regional city in Victoria, involving interviews with the manager, two trainees and the coordinator of the cleaning traineeship course offered by the nearby TAFE Institute. This firm had chosen to enrol its entire staff in traineeships to ensure a uniform level of quality in its operations. There were 14 interviews in all, lasting from 30 to 60 min. Most were taped, with permission, and transcribed.

The general construction case study included interviews with a large number of national stakeholders. A large number was necessitated because it quickly became apparent that the traineeship qualification in construction was highly controversial. The seven telephone stakeholder interviewees were senior officers of the two major employer associations, a national and State skills council, the major trade union, a large private training provider affiliated with a State branch of the union and a registered training organisation in a remote area of Western Australia that specialised in providing construction traineeships to young indigenous people. Two case studies were also carried out: in a large group training organisation in Canberra (seven interviews) and a small house-building firm in a small regional town in New South Wales (four interviews). In each of the case studies, interviews were carried out with a senior manager, two trainees and a teacher from the relevant training provider (in the case of the group training organisation, the RTO was part of the same organisation as the GTO). As with the cleaning industry study, interviews were generally taped and transcribed, although site conditions prevented this occurring in all of the company case study interviews.

The data derived from the case studies were used to inform the development of a number of models and conclusions as part of the bigger project (see Smith et al. 2009). For this chapter, the data relating to occupational identity have been drawn out and analysed to begin an examination of occupational identity in traineeships. It is a limitation of this chapter that the research was not carried out for the sole, or even major, purpose of examining occupational identity. The focus of the project was on quality in traineeships. The question of occupational identity was implied in several questions put to each respondent type, and emerged as a theme, but was not discussed in great detail as a specific topic. This is of course a limitation of this chapter: better data may have been obtained had the topic of occupational identity been a theme that was 'etic' (brought in from outside) rather than 'emic' (arising from participants' responses) (Stake 1995, p. 20).

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<sup>1</sup>Cleaning is included within the general area of construction by most training providers and is covered by the national construction skills council, although State skills council coverage varies.

## Research Findings

Cleaning in Australia was found to be a large but low-profile industry which has traditionally employed casual staff, with a large turnover. Before the advent of the Asset Maintenance Training Package in 2004, there were no national qualifications, and the industry stakeholders believed that the wide use of traineeships would not only lead to greater worker satisfaction, lower labour turnover and better career paths but also higher industry standards and a better safety record in the industry. The research clearly indicated the depth of skills and knowledge required to be an effective cleaning worker and the rapid technological advances in the industry, which were however reported to be unevenly distributed among companies. Many workers in the industry had language or literacy difficulties and the training methods needed to account for these. Government traineeship incentives were important for most employers because of low profit margins in the industry. The passion of some of those working in the cleaning training area for their industry was evident in the research, although the State TAFE curriculum manager (who was from a construction background) was highly disparaging about the industry and had no interest in expanding that area of his operations. He said:

We're not talking about something that'd sort of be a critical occupation, an important one . . . I'm not sure there's any major gain in this type of thing.

The company case study showed the company's manager and the teacher from the RTO, a TAFE Institute in a different State from the State TAFE curriculum manager, as enthusiastic and committed to the industry. The teacher said:

Look, you won't slow us down on it; we're mad on our cleaning, all of us, all over the state and once we start, we get into it.

The workers enjoyed their traineeship but, one felt, would have been equally happy working without formal training. Both said that they were pleased to undertake the training because the manager asked them to but were not particularly interested in further development of their skills. However, the traineeship manager of the national commercial company emphasised the motivation that she felt trainees received from undertaking qualifications.

It's a big deal for them (the trainees) and it's really special. It's really nice to see that pride, and the fact that something they've done has got a perceived value now that it may not have had before, or they didn't think it had before.

The construction industry in Australia was important to the economy and was reported to be experiencing skills shortages in some trades partly because the industry had become increasingly subcontracted, with subcontractors reportedly unwilling to employ apprentices. The Certificate II General Construction qualification available at the time of the research was something of a compromise among competing interest groups. Trade unions did not want to interfere with the integrity of the apprenticeship qualifications, which were at Certificate III level and divided into trade areas, so the traineeship qualification ended up as a general course which did not provide skills that led to a licence to practise. Little credit transfer was available from the traineeship qualification into the apprenticeship qualification.

Proposed new qualifications, which appeared to be more appropriate in terms of actual skills delivered and also articulation possibilities, were the subject of political argument, which were still unresolved over a year after the research was completed. Trade union interests objected to the ‘fragmentation’ of the traditional apprenticed occupations and feared that employers would choose to employ, as one interviewee put it, ‘half-qualified’ workers. This interviewee said:

It’ll fill the industry up with a big group of semi-skilled people who are going to do damage.

Employers on the other hand preferred the option of ‘half-qualified’ to unqualified workers. The traineeship had not become widely used; it was mainly used for particular client groups, e.g. disadvantaged groups and school-based trainees, although there were some mainstream examples, as in the small company case study. The latter case study showed a company attitude to training similar to those for a traditional apprenticeship, and indeed the manager said he ‘put the boys on’ as apprentices when they had finished their traineeships. In one of the ‘host employer’ companies that the GTO dealt with, a major national construction company that operated mainly through subcontracting, the trainees appeared to be poorly supervised and unhappy in their work. It seemed that some education of employers was necessary to compensate for lack of experience with traineeships and, in some areas of the industry, lack of experience even with apprenticeships due to subcontracting. In both of the case studies, there was evidence of high-quality training provided by the RTOs involved and deep occupational commitment from the teachers. The small company had previously used a different RTO and had ceased to use it precisely because the teacher showed no commitment to the construction industry and did not have a trade background himself. The teachers recognised the value to the trainees of starting with a traineeship rather than committing immediately to a longer-term apprenticeship. One said:

I think a lot of people think ‘I really want to get into this because it sounds so great; all my mates are there’, but it’s just not for them. There’s not so much waste (with a traineeship), but if they sign into an apprenticeship and don’t like it they’ve got to start from the beginning again when they choose to change.

## **Discussion of Issues Related to Occupational Identity**

As Brown (2004, p. 266) notes, occupational identity formation depends on a number of factors at the level of the individual, the organisation and society as a whole. The findings of this study are briefly discussed under these headings.

### ***Individual***

A possible reason for the lack of occupational identity is that many trainees may be ‘put onto’ traineeships by their employers as part of a cohort of workers without

a clear sense of what being a trainee may involve, whereas it is unlikely that an apprentice would not know what was in store if his or her employer or potential employer offered an apprenticed position. While employees appreciate gaining a qualification, it is not clear how much status they attach to the qualification. Valenduc et al. (2007) referred to organisational identities being more common than occupational identities in the service industries, and this certainly seemed to be a feature among workers in the cleaning industry, although most of the managers and trainers were fiercely committed to the occupation as well as the company. A further reason for underdeveloped occupational identity could be the relatively short period of training. In a 12-month training period, it is perhaps unrealistic to expect the same commitment to a job as occurs during a 3- or 4-year apprenticeship. Perhaps the sense of expertise that develops during an apprenticeship contributes to feeling 'at home' in the occupation.

### *The Organisation*

Employers are still relatively inexperienced in employing trainees (as Rowlands 2000, has noted) and may not themselves have undertaken traineeships. In the construction industry which is heavily apprenticed, individual employers are very clear about how to manage trainees (i.e. the same way as they manage apprentices), but large-scale companies operating by project management are less clear. Other organisations besides companies are involved in occupational identity formation. Trade unions showed a highly conservative face in this project, resisting the advent of new occupations and protecting traditional interests. This was shown most clearly in the construction case study, but in the cleaning case study, the trade union representative also showed some resistance to the idea of traineeships, although to give him credit he was self-reflective about his attitude and attempted to remain open-minded. Resistance to threats to occupational hegemony arising from occupational diversification has been noted to be a feature particularly of male occupations (Ashcraft 2005); the construction industry is, of course, heavily male. The other organisation important in traineeships is the RTO. Committed and enthusiastic teachers are able to enthuse the trainees about the occupation. However, it should be noted that the construction teachers definitely saw the traineeship as an entrée to an apprenticeship rather than a destination in itself. They may therefore have been conveying subtle messages about the lesser worth of the traineeship compared with an apprenticeship.

### *Society as a Whole*

As mentioned earlier, traineeship occupations in Australia are currently of lower status than apprenticed occupations. The presence of a long-established apprenticeship

qualification in itself, in a circular process, may create this prestige: there is a collective sense of occupational identity which adds to the individual sense of occupational identity (Valenduc et al. 2007). The passage of time may assist recognition of these occupations as equal in status, but it is likely that continued resistance from male trade interest groups will hamper the process.

We now return to the three research questions:

- What sense of occupational identity exists in the occupations in which the two traineeships are offered?
- What factors affect the strength of occupational identity?
- What contribution does the presence of a traineeship have to the development and perception of occupational identity?

Clearly, the sense of occupational identity is currently underdeveloped in the cleaning industry and seems to occur only as people move into more senior positions (as managers or teachers). In general construction, the sense of identity is very weak at trainee level and attaches instead to the act of moving onto apprenticeships from traineeships.

Traineeships may always attract a relatively weak sense of identity when they are in those industries which retain apprenticeships. However, there is a possibility that this could change over time. As Brown et al. (2007, p. 4) note, a strong sense of occupational identity can be a significant barrier to workforce mobility and economic flexibility. This certainly appeared to be the case in the construction case study; it could be that over time the relative flexibility of the traineeship model could gain favour in the construction industry, and those undertaking traineeships could develop a greater occupational identity, without feeling they are 'second best'. With the cleaning industry, and other industries that do not have apprenticeships, there may be more chance that traineeships will contribute to the development of an occupational identity. The short length of the traineeship appears to be a contributory factor to the relatively low level of occupational identity. One year to become a 'skilled worker' does not, perhaps, afford sufficient time to identify strongly with the industry and the job, nor perhaps to develop the level of expertise that enables the worker to feel he or she has mastery.

The presence of a traineeship has mixed effects on the development and perception of occupational identity. The act of attaching a qualification to a job in itself provides it with a degree of status which at least some stakeholders felt was important in developing occupational identity. However, there are some complications. Traineeships can lead onto higher level qualifications (and in fact were always intended to do so); while in one sense this is a very strong advantage (particularly in the development of a propensity for lifelong learning), in another sense, they are not seen as a destination, and this may be a problem in identity formation. Apprenticeships in Australia provide workers with a qualification which for most participants represent a 'destination' qualification. After a year completing a traineeship qualification, is the trainee a skilled worker or not? These are difficult matters for the VET system and particularly those involved in traineeships to consider. A 'completed' trainee may be just as 'skilled' as a completed apprentice in another industry, but the perception may be otherwise.

## Conclusions for VET Research and Practice

As noted, the focus of the research project was not on occupational identity and only a small part of the questioning was in this area. However, much information about the question of occupational identity could be derived from the data. There were clear examples of some respondents' openness and others' closedness to the possibility of strong occupational identities being possible and describable in areas of work that were not previously regarded as worthy occupations. This chapter is, however, only an initial exploration of this area. It is suggested that the research method – involving interviews at different levels within the VET system and within companies – is a suitable method for a larger study. In terms of practice, it could be advantageous for companies and for RTOs to stress, to a greater extent, the importance and significance of the occupations to which traineeships are attached. Currently there tends to be an emphasis on the gaining of qualifications *per se* rather than an emphasis on the occupation itself. Such an emphasis may involve somewhat more emphasis on the knowledge-based associated with the training and a celebration of the skills involved in the work. At a national level, the changing of entrenched attitudes will be difficult, but it is to be hoped that over time diverse occupations will be treated with equal respect.

However, as discussed in the previous section, this chapter has also tentatively suggested an argument that a strong sense of occupational identity is not necessarily an ideal to aim for. A willingness to learn further and move along other pathways may also be desirable and may be fostered by undertaking a traineeship as opposed to a traditional apprenticeship.

## References

- Ashcraft, K. (2005). Resistance through consent? Occupational identity, organizational form, and the maintenance of masculinity among commercial airline pilots. *Management Communication Quarterly*, 19(1), 67–90.
- Booth, R., Roy, S., Jenkins, H., Clayton, B., & Sutcliffe, S. (2005). *Workplace training practices in the residential aged care sector*. Adelaide: NCVER.
- Brockmann, M. (2010). Identity and apprenticeship: The case of English motor vehicle maintenance apprentices. *Journal of Vocational Education and Training*, 62(1), 63–73.
- Brown, A. (2004). Engineering identities. *Career Development International*, 9(3), 254–273.
- Brown, A., Kirpal, S., & Rauner, F. (2007). Introduction and overview. In A. Brown, S. Kirpal, & F. Rauner (Eds.), *Identities at work* (pp. 1–12). Dordrecht: Springer.
- Karmel, T., & Cully, M. (2009). *The demand for training*. Adelaide: NCVER.
- Karmel, T., Blomberg, D., & Vnuk, M. (2010). *The effectiveness of the traineeship model*. Adelaide: NCVER.
- Kirby, P. (1985). *Report of the committee of enquiry into labour market programs*. Canberra: Australian Government Publishing Service.
- National Centre for Vocational Education Research (NCVER). (2007). *Australian vocational education and training statistics: Apprentices and trainees, Annual 2006*. Adelaide: NCVER.

- National Centre for Vocational Education Research (NCVER). (2009). *Australian vocational education and training statistics: Apprentices and trainees, Annual 2008*. Adelaide: NCVER.
- Rowlands, B. (2000, March 23–24). How owner/managers decide to participate with new apprenticeships for the first time. In *Third annual conference of the Australian Vocational Education and Training Research Association*, Canberra.
- Schofield, K. (2000). *Delivering quality: Report of the independent review of the quality of training in Victoria's apprenticeship and traineeship system*. Melbourne: Office of Post Compulsory Education & Training.
- Smith, E. (2002). Theory and practice: The contribution of off-the-job training to the development of apprentices and trainees. *Journal of Vocational Education and Training*, 54(3), 431–453.
- Smith, E. (2004, March 17–19). Political construction of skill: The effects of policy changes in entry-level training in Australia on participation rates and on the perception of 'skill'. In *Learner and practitioner: The heart of the matter: 7th Australian VET Research Association Conference*, Canberra.
- Smith, E. (2006, July 1–4). The experiences of apprentices and trainees in small Australian businesses: Some qualitative research findings. In *Socially responsive, socially responsible approaches to employment and work conference*. Australian Centre for Research in Employment and Work, Monash University Prato Centre, Tuscany, Italy.
- Smith, E. (2008, February 1–2). The crowded market: Agencies dealing with apprenticeships in Australia. Situated competence development through innovative apprenticeships. In *Conference of the International Network on Innovative Apprenticeships*, Vienna.
- Smith, E., & Keating, J. (2003). *From training reform to training packages*. Tuggerah Lakes: Social Science Press.
- Smith, E., Pickersgill, R., Smith, A., & Rushbrook, P. (2005). *Enterprises' commitment to nationally recognised training for existing workers*. Adelaide: NCVER.
- Smith, E., Comyn, P., Brennan Kemmis, R., & Smith, A. (2009). *High quality traineeships: Identifying what works*. Adelaide: NCVER.
- Snell, D., & Hart, A. (2008). Reasons for non-completion and dissatisfaction among apprentices and trainees: A regional case study. *International Journal of Training Research*, 6(1), 45–73.
- Stake, R. E. (1995). *The art of case study research*. Thousand Oaks: Sage.
- Valenduc, G., Vendramin, P., Krings, B. -J., & Nierling, L. (2007). *Occupational case studies: Synthesis report and comparative analysis* (WORKS Project). Retrieved May 7, 2010, from <http://www.ftu-namur.org/fichiers/WORKS-D11-final.pdf>

# Chapter 10

## Competency-Based Training in Australia: What Happened and Where Might We ‘Capably’ Go?

Lewis Hughes and Len Cairns

### Introduction

In the early 1990s, there was well-founded educationalists’ concern that the introduction of CBT in Australia was a turning away from a holistic education through a narrow ‘behaviourist’ focus. It was argued that the exclusion of nurturing ‘values’, which was characteristic of a more expansive view of education and learning, was evident (Cairns 1992). This approach echoed the narrow approach to the definition and understanding of competency-based education and training that had emerged in the United Kingdom (Burke 1989) and had been taken up strongly across the Australian system. However, there has been, from the outset, an embedded intention that the learning within a CBT approach would be more expansive than the narrow learning which some feared. This intent has not been universally recognised and responded to over the period under consideration, and we will, in this chapter, address elements of this aspect (Hughes 2006).

The paper ‘*Competency-Based Education: Nostradamus’s Nostrum*’ (Cairns 1992) drew attention to the ascendancy of employer and trade union influence and control in reshaping the notion and actuality of VET in Australia. This chapter suggested that a ‘Nostradamus’ (like) foreseeing of achieving and maintaining international competitiveness gave rise to an urgency to reform VET and that there was validity in the *behaviour outcome* nostrum to reform Australian VET systems. The suggestion was that there were elements of a ‘quick fix’ and ideal solution in this CBT approach as narrowly defined for training rather than learning.

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At the time, there was not a logical link between the move to CBT reducing current unemployment and assuring future employment which was the stated main reason for the change to CBT. Training does not necessarily create jobs, and our global economic competitors are/can be equally vigorous in respect of VET with a stationary position internationally as the overall result (Cairns 1992).

Notwithstanding the flaw in the logic of the public rhetoric as mentioned above (Collins 1993; Rutherford 1995; Harris et al. 1995, pp. 64–69), the opportunity was taken by employers and unions, who, at that time, had significant influence on the then government, to control the VET agenda through a process of excluding many of the educationalists from the debate (Pusey 1991, p. 148; Harris et al. 2009, p. 29). The road back for educators to have a proper seat at the VET table has required perseverance and included new forms of partnership with VET stakeholders grounded, at the local/close relationship level, in mutual valuing of what educators contribute to strong holistic learning outcomes.

At this time, at the beginning of the twenty-first century, there are anecdotal reports of innovations in direct partnerships between employers and VET providers which are overtly valued for their holistic learning and give cause for optimism. As reported by Harris et al. (2005, p. 9), technical and further education practitioners (VET teachers) are engaging with workplace learning and strengthening learning cultures in the workplace and modelling lifelong learning. These collaborative partnerships contribute greatly to turning industry away from the narrow perception of a customer/supplier relationship between industry and VET providers in which the opportunity for a VET provider to add ‘capability’ value to the individual and the organisation is suppressed.

There is cause to applaud the CBT systemic trend – albeit possibly unconsciously so – towards strengthening the position of ‘capability’ as an attribute beyond the Fordist competency focus upon knowledge and skill to the exclusion of other outcomes from richer learning. These richer ‘capability’ outcomes include self-esteem, a commitment to values and confidence in extrapolating from training outcomes to new and challenging situations (Stephenson 1998; Cairns and Stephenson 2009). However, there are instances of current delivery practice leaving much to be desired, and weakness in the training of VET teachers is iconic of this and, possibly, a root cause of under-delivery of CBT in Australia. It is useful to note at this stage that the term ‘capability’ has been used by a number of writers over the past 20–30 years (RSA Cantor Lectures 1980a; RSA Capability Manifesto 1980b; Stephenson and Weil 1992; Sen 1985, 2010; Nussbaum and Sen 1993). These references represent two distinctly different (yet potentially reinforcing of each other) developments of the term and its theorisation. For Sen and his colleagues, capability (and the oft-extended plurality, capabilities) is about diversity, opportunity and economic differentiations such as poverty (Sen 2010). The RSA approach and the extensive theorisation and applications by Stephenson and Cairns (see Cairns and Stephenson 2009, Chapter 1) have been based in education and training areas and continue to define and utilise a holistic understanding of the singular term *capability* as an individual (and also possibly organisational) capacity or potential (Hase et al. 1998). The application of this concept across VET and workplace learning has been

consistently researched and written about since the early 1980s. (See Cairns and Stephenson (2009) for a detailed history of this work and Sen (2010) for an account of his usage of *capabilities*.)

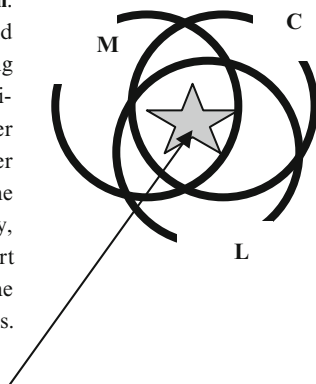
At this point, it is important to understand that training packages are the devices through which CBT is delivered in Australia. For those who are not familiar with the Australian concept of training packages, it is helpful to explain that these are not what the name implies. A training package is not an assembly of defined curriculum and resources, but is a National Quality Council (NQC) endorsed specification of the competency standards, prescriptive guidelines as to how achievement of the competencies is to be assessed and a specification of how the competencies are packaged (assembled together) to form a qualification within the Australian Qualifications Framework (AQF). Associated with the delivery of a training package, there are also support materials (sometimes referred to as non-endorsed components) which encompass support for learning facilitation, assessment and professional development of trainers and assessors.

Our intent in this chapter is to suggest that the present weaknesses in delivery of training packages are largely a matter of awakening VET teachers to the inherent rich learning intent and the innovative opportunities that are possible if they choose to act upon them. This is being newly encouraged by the recent inclusion of ‘capability’ (albeit not yet quite as the authors understand it) into the CBT conversation. To this end, the LCM model (Hughes 2007a) has much to offer as a tool for strategic planning and action – leading to VET learners graduating as ‘capable’, lifelong learning, committed contributors to the human capital and social capital assets of the Australian community. Further, it is our argument that apprenticeships and all VET work would be enhanced and broadened to be more applicable to the twenty-first century by the employment of this model in developing VET practice and delivery.

In essence, the LCM model is a tool to be applied to strengthening organisational achievement – in this case, VET graduates capably drawing upon what they know and can do – through valuing the outcomes of the totality of lifelong learning, having a nurturing learning and transfer of learning culture, and valuing motivations (see Fig. 10.1). Importantly, this meshing of values lays the foundation upon which a VET graduate acquires and sustains a commitment to contribute.

The 2008 establishment of Skills Australia (Commonwealth of Australia 2008) as an advisory body to the Australian government with a membership legislated to encompass experience in academia, the provision of education and training, economics and industry (p. 5) returns a strong VET role for educationalists for which the Cairns and Stephenson notions of capability and the Hughes LCM model have resonance. This is inherent in the Skills Australia defining of workforce development as – *‘Those policies and practices which support people to participate effectively in the workforce and to develop and apply skills in a workplace context where learning translates into positive outcomes for enterprises, the wider*

**“M” Motivation:**  
VET provider and employer identifying and valuing the motivations of the learner to learn and transfer the outcomes to the workplace. Similarly, the learner being alert to, and valuing, the milieu of motivations.



LCM Sweet Spot – Through maximising the LCM intersection, the VET graduate capably drawing upon their competency.

**“C” Culture:** A culture within both the VET provider and the organisation to which learning is to be transferred which nurtures drawing upon what is known and can be done.

**“L” Learning:** The VET learner valuing the totality of their outcomes from lifelong learning and similarly valuing this in others as they, in turn, value the learner.

**Fig. 10.1** LCM model (Hughes 2007a) applied to becoming capably competent

*community and for individuals throughout their working lives*’ (Skills Australia 2010, p. 7). This position is a reaffirmation of the importance of learning, in the broad lifetime supporting sense and valuing making an effective participation ‘commitment’ to self and others, as opposed to narrow training for the moment. This shift in emphasis from simple and observable skill demonstration to more learning and applicability of that learning represents much of what has been the basis of criticism of the former narrow approach to VET in Australia. The emphasis is now upon attention to matters which support and encourage drawing upon what is known and can be done in a manner which contributes to all and which can be ‘translated’ into broader outcomes than mere reproduction of observable identified narrow behaviours.

## Research Questions

In view of the foregoing, this chapter addresses the question ‘*Has Australian competency-based training (CBT) delivered according to the promise?*’ And, given the now entrenchment of CBT, the question arises – ‘*How might the Australian future outcomes from CBT be enhanced?*’

## Research Methodology

An institutional ethnographic approach has been taken to review the VET systemic text in terms of the underlying philosophy and intent expressed over the previous decades. The resulting insight then informed a judgement of the appropriateness, or

otherwise, of advocating overt pursuit of ‘capability’ as a CBT outcome in Australia. This analysis was conducted over the past few years as a cumulative and detailed examination by the authors as participants across the VET sector.

Similarly, originally developed as a generic tool for strengthening organisation achievement through drawing upon the outcomes of lifelong learning, the LCM model (Hughes 2007a) was derived from ethnographic exploration with outcomes from group conversations and interviews, set against organisational systemic influences, being viewed through the prism of activity theory.

The foregoing research questions formed the basis for this study which, we suggest, has added to the exploration of the efficacy of the LCM model in diverse organisational/systemic achievement circumstances and has examined the usefulness of a VET learning model including the *capability* concept as an additional informing view.

### ***Outcomes: The Current Status and Where the VET Journey May Lead***

With the benefit of hindsight, there is much which could have been done better; there is an indication of much ‘good’ – in both human and social capital terms. Suffice to say that the distinctions and potential in VET systems for some overlap between these two concepts (viz. human and social capital) are discussed in an extensive literature (Becker 1975; Coleman 1988); accordingly, they do not need extensive elaboration here. However, this begs the question ‘What would have been the circumstance if the approach to VET had remained essentially the same, but with the added resources as has been devoted to the introduction of CBT?’. Cognisant of this question, the following offerings of positive outcome are acknowledged as vulnerable to ‘What if?’ challenge and are more of an observation than avowed researched findings. This is highlighted by the Billet et al. (1999, p. v) observation of the problematic nature of ascribing the emergence of a more adaptive and flexible workforce to the introduction of CBT.

In the 20-year period in which CBT has been at the core of VET in Australia, the following changes and developments have emerged. However, in agreement with Billet et al. (1999), the key question that we suggest needs to be considered when making such lists is the following: ‘How many of these shifts and changes can and should be attributed to the implementation of CBT as the dominant approach to Australian VET?’

- Student participation has increased (although not at a consistent rate and worryingly plateaued in recent years) – rising from 1,042,500 in 1992 (ANTA 2004, p. 8) to 1,696,400 in 2008 (NCVER 2009a, p. 9).
- Employers have welcomed qualifications being awarded based upon accredited training [defined competency standards] as this enhances trust in consistency (Townsend et al. 2005, p. 35).

- Pathways to qualification have increased – including VET in schools, recognition of prior learning (RPL, sometimes referred to as recognition of current competency) and Australian apprenticeships (see following) in both trade and non-trade sectors, with accelerated options and not based upon time-served. Notwithstanding advantages such as due recognition of prior learning and qualifications achieved in shorter time, it is noted that the availability of accelerated apprenticeship is not universally valued by employers, learners and providers (Callan 2008, p. 7). For example, employers are required to put more resources in – such as workplace mentors – and have less time to recover their investment before the now qualified apprentice is poached by another employer; some learners find the more intensive study load too demanding; and providers are concerned about increased attrition.
- Offering traineeships in non-trade areas as an addition to traditional trade apprenticeship (initially, collectively, known as *new apprenticeships* and now known as *Australian Apprenticeships*) has expanded the opportunities for young people and mature adults to acquire competencies, and hence qualifications, in a *learning-and-working* format. Relevant statistics being – ‘3.8% of Australian workers were employed as an apprentice or trainee as at December 2008, compared with 2.5% in 1998; the rate of training (apprentices and trainees as a proportion of the number of individuals employed) as at December 2008 was 12.0%, compared with 9.2% in 1998; 25.8% of all trade apprentices and trainees completing higher-level qualifications (Certificate III and above) in 2008 completed their learning in two years or less, compared with 16.4% in 1998’ (NCVER 2009b, p. 1).
- Group training organisations (GTOs) have been established to employ apprentices and trainees under an apprenticeship/traineeship contract and then place them with host employers. This initiative has removed past cost and obligations and administrative burdens from traditional employers of apprentices. The transfer (where employers so choose) of such burdens from employers to GTOs has increased the opportunities for people to acquire qualifications via an apprenticeship/traineeship pathway.
- Beyond awarding advanced status, RPL is a device by which people are awakened to the value of what they already know and can do and are motivated to build upon current competency, but its range of innovative possibilities is undervalued (Harris et al. 2009, p. 25; Hughes 2007b, 2009).
- Providers of VET have been expanded to now include approximately 2,200 privately funded registered training organisations (RTOs) – adding to learner choice and flexibility in customisation of delivery. In total, in November 2009, there were 4,836 VET providers (source: NQC).
- Relationships between VET providers and industry have strengthened (NCVER 2000, p.1).
- Work-based learning is now more valued and has led to instances of enterprise standards being endorsed alongside the industry standards providing coverage across Australian industry and commercial/service activity (NCVER 2000, p. 1).

- Licensing requirements for many high-risk occupations are now coming into the CBT/training package environment.
- The two enabling guiding structures of the Australian Qualifications Framework (AQF) and the Australian Quality Training Framework (AQTF) are now in place and subject to strengthening review (refer AQF Council 2009; DEST 2007, respectively).
- As is the VET system focus, the foregoing are human capital orientated. However, there are also social capital outcomes to be acknowledged and applauded. The following are examples of early-leader social capital outcomes from the coupled actions of training reform and the introduction of CBT.
- Four Wheel Drive Clubs are offering CBT to members as a membership recruiting and strengthening initiative. The Whyalla & District 4WD Club is an example (<http://www.whyalla4wd.org.au>, viewed 25 April 2010).
- Volunteer involving community organisations such as surf life saving, volunteer firefighting, environment conservation and community care are drawing upon CBT to combine efficiency of operations with recruiting, retention and overt expression of valuing volunteers. For many volunteers, the training which they undertake is highly valued for career purposes, and even when career application is not the joining and remaining motivation, being properly trained is taken as evidence that they are valued as a volunteer. It should be noted that volunteering in Australia is a substantial community strengthening (social capital and of economic value) asset. In 2006, Australia volunteering involved 3.1 million people (aged 18 years and over) who worked at least once a fortnight for one or more organisations (ABS 2008, p. 1).
- Recognition of prior learning (RPL), which matches documented experiences against the competency standards, is being offered to volunteers as a way of a volunteer involving organisation giving something in return for services rendered (Hughes 2007b, 2008a, p. 2). By this device, volunteers (who so choose) are assisted and motivated to gain qualifications which they would otherwise not have pursued.
- The CBT flexibility of access to learning, and valuing (giving credit) outcomes from lifelong learning, has potential for recruitment purposes to the community services and health industries (Hughes 2008b). These industries are facing significant future staffing challenges; however, there is a strong recruitment connection to social capital values already in play.
- Interestingly, Priest (2009, p. 6) draws attention to the dimensions of social capital, in her view, as including personal outcomes for VET students in building their networks from which they derive support, and contribute to, as an outcome from their learning experience.

Clearly, there are aspects of CBT which invite further research regarding the integration of human capital and social capital outcomes.

Exploration of the social capital possibilities is suggested with two purposes in mind. Firstly, this is a vehicle which could bring about opening the collective

VET/industry systemic mind to an expanded view of the value of CBT and thus assisting with breaking free of the highly focussed behavioural objective which has caused CBT in Australia to have an element of being without education soul, to the detriment of it being orientated as a whole-of-life education experience. Secondly, and entwined with the first, exploring the relevance of social capital assists with looking ahead to meet expanding needs in changing times. This is substantially different from a CBT-orientated human capital focus which is, thus far in Australia, inclined to be focussed more upon near future and narrow industrial needs.

Introducing ‘social capital’ into the discussion of an expanded competency concept invites attention to capability. Arguably, for too long there has been (in practice) a shallow understanding of what it is to be a competent person within the Australian tradition where employers take short-term views and there is inadequate valuing of nurturing employee commitment. This weak attention to what we have defined here as capability has flowed on to the training of trainers and thus entrenching a low-horizon vision of learning outcomes. Identifying, and valuing, the contribution to social capital of CBT in Australia is a *lifting-the-vision* device in respect of the ‘system’, the teachers/trainers, the learners and the milieu of stakeholders.

### ***The Next Step: ‘Capability’ Beckons as a Reconfirmed Outcome from CBT***

In this chapter, it is reiterated that ‘capability’ of individuals is a quality beyond just the possession of knowledge and skills required to perform a presently defined task which is commonly thought of as ‘competency’ in the Australian VET context. It may be that an employer stance of reluctance to invest in training of employees beyond what can be immediately drawn upon – and therefore not investing to a subsequent employer’s advantage – has constrained support for a ‘capability’-orientated VET system. If so, this is a strong argument for restoring ‘educationalist’ influence within VET in response to the realisation that community stakeholding reaches beyond individual employer short-term objectives. Capability exists when an individual is confident in drawing upon what they know and can do under circumstances of the unexpected and new challenge. It is clearly about being able to cope, perform and understand whilst working in the unfamiliar aspects of life as well as the known and familiar (see Cairns and Stephenson 2009 for a more detailed exposition). With this in mind, it is intriguing that from the outset, in Australia, the CBT learning outcome intention was broader than what has become the norm in terms of delivery. Drawing from National Training Board (NTB 1992), Harris et al. (1995) cite the definition of competency as:

- The concept of competency focuses on what is expected of an employee in the workplace rather than on the learning process; and embodies the ability to transfer and apply skills and knowledge to new situations and environments. This

is a broad concept of competency in that all aspects of work performance, and not only narrow task skills, are included. It encompasses:

- the requirement to perform individual tasks (task skills);
- the requirement to manage a number of different tasks within the job (task management skills);
- the requirement to respond to irregularities and breakdowns in routine (contingency management skills);
- the requirement to deal with the responsibilities and expectations of work environment (job/role environment skills), including working with others. (NTB (1992, p. 29) – as cited by Harris et al. (1995, p. 20)

Had *VET educators* been at the CBT planning table, rather than excluded from it (Pusey 1991, p. 148; Harris et al. 2009, p. 29), there is the possibility that the points above, which could be said to reflect some of the capability aspects – referred to as dimensions of competency – would have been strongly addressed and caused the nurturing of more holistic learning outcomes. Under such circumstances, being out of sight, and thus out of mind, would not have led to the narrowing of vision as indicated by the National Training System Glossary definition of competency (also competence) ‘*the ability to perform tasks and duties to the standard expected in employment*’ (<http://www.dest.gov.au/search.htm?query=Clossary> – viewed 23 April 2010).

It may be, albeit with hindsight, that the movement to establish and consolidate the CBT approach across a range of industries – and particularly within what had traditionally been deemed ‘trade’ areas – was a push to narrow the specification of competencies to achieve broad industry acceptance. In this circumstance, the attendant extra ‘frills’ were discounted as unnecessary in the short term and thus did not arise for many years as a central necessity. Arguably, weakening of the education qualities of CBT was further compounded by the notion that, providing the competency outcome was achieved, the CBT learning pathway was not important. Although, possibly not intended, this has led to an undervaluing of the holistic quality of the learning experience. The outcome has been that many VET graduates (people who have gained either a preemployment or an in-employment qualification) have not acquired a predisposition to lifelong learning and have not viewed their initially acquired competency as a foundation upon which to ‘capably’ build. It is also a feature that they have not valued this as a component of ‘commitment’ to career strengthening. It is this narrowness of ‘education’ view which set up the dichotomy between the new CBT advocates and the ‘learning as process’ educators who saw the adopted CBT ideas in the early 1990s as reductionist and narrow (Cairns 1992).

The Cairns and Stephenson (2009) experience which emerged from case studies in both the UK and Australia where qualified tradesmen responded that they had obtained their ticket (qualified), and therefore were no longer learners, points to a need to change this perception of having arrived in the end of their only learning journey. When viewed against the Department of Education and Early Childhood

Development (DEECD (2010, p. 2) finding that apprentices have relatively low expectation of promotion and are much less likely than university graduates to have undertaken further study, and possibly leading to a widening income gap over time, there is an apparent need to enrich the learning of apprentices in such a way that they do acquire the attribute of lifelong learners rather than stay with a narrow instrumental focus. Of course, this applies across the spectrum of VET learners who may be similarly disadvantaged by not acquiring the capacity and motivation to continue their learning journey.

With these points in mind, there is now cause for hope as the National Quality Council (NQC) commissioned 2009 review of VET in Australia has suggested the following:

*Recommendation 1– Revise the definition of competency as follows: Competency is the consistent application of knowledge and skill to the standard of performance required in the workplace. It embodies the ability to transfer and apply skills and knowledge to new situations and environments. (NQC 2009, p. 6)*

This recommendation – particularly the last sentence – resonates with the Cairns and Stephenson (2009) view and invites embracing *capability* as an explicit learning goal and the associated return to overt valuing of the pathway (as travelled by the learner) as a capability nurturing experience. In this regard, Stephen Darwin offers much to reflect upon by offering the view ‘*It is axiomatic that the changing nature of work and learning means the vocational educator is now increasingly in an essential role in cultivating the skills necessary to sustain ongoing learning beyond the immediate learning environment*’ (Darwin 2007, p. 67). The movement towards the consideration of learning beyond the immediate skill acquisition element is emerging as part of the revised thinking on competency-based training. We see these shifts as a tacit (and at times explicit) embedding of ideas expounded in the Australian context by the capability advocates over the past two decades and a better understanding of the needs of VET learners.

The nature of the VET opportunity for educators to reassert the value of learning in a broad sense is indicated by John Stephenson’s position, albeit in regard to higher education learners:

Student capability is developed as much by learning experiences as by the specific content of courses. If students are to develop ‘justified confidence’ in their ability to take purposive and sensible action, and to develop the unshingly characteristics of confidence in their ability to learn, belief in their power to perform and proven powers of judgement in unfamiliar situations, they need real experiences of being responsible and accountable for their own learning, within the rigorous, supportive and, for them, unfamiliar environment of higher education. (Stephenson 1998, p. 6)

The *capability* view has been well documented over the past 20 years within Australia and Europe (Cairns and Stephenson 2009), and essentially the case has been consistently developed that competency (skills, knowledge and attitudes to current issues and needs) is a basis for the development of *capability* which involves additional consideration of potential, efficacy and values to enable operation in more flexible and adaptable ways in unfamiliar situations and with unfamiliar problems.

### ***Strengthening CBT in Australia Through Explicitly Nurturing Capability and Associated Commitment: Via a Rich Learning Experience***

The shift from curriculum-mandated (time-served) vocational education and training to a focus upon competency-defined outcomes, which was the rationale of the VET approach adopted in the early 1990s in Australia, is starting to benefit stakeholders through flexibility in learning facilitation. However, the coupling of this with the notion that the learning pathway is secondary led, in the initial years of implementation, to a diminished valuing of the learning experience – as evidenced by instances of the training of VET teachers via ‘short-course’ formats of as little as 10 days including assessment (Hughes 2010, pp. 4–5).

In addition to our concern regarding ‘short-course’ delivery (of which the training of some teachers is just one example) in practice, much assessment is restricted to demonstration of competency in current and familiar circumstances. However, the VET system intent is that competency should be demonstrated in different circumstances over time. Therefore, returning to valuing the quality of the learning journey is called for. This requires restoring the notion that the learning pathway is significant in achieving ‘education’ outcomes which yield a capacity to apply competency in new and challenging circumstances – i.e. pursuing capability. Also, and of high importance, the active engagement of a VET learner – such as an apprentice – in a demanding, high-quality, learning experience is closely coupled to the level of commitment which the learner has to the learning and the career which this supports. Returning to the training of VET teachers as an example, it is unlikely that graduation from a 10-day course will feed commitment to a career (or even a part-time role) as a VET teacher.

Even where the actual attainment of the specified competency is not in dispute, the development of an ongoing capacity to learn is as much a competency attribute as the acquisition of technical knowledge and skill which is required in the moment. Accordingly, there is the prospect of much to be gained by the learner acquiring the attribute of being able to *capably draw upon their competency* by conscious engagement with a rich learning experience. In this regard, the maximising of coupling three values becomes paramount – i.e. the learner valuing being capably competent; the employer valuing employees who are capably competent; and the VET organisation valuing graduating, committed, capably competent people and, accordingly, empowering VET teachers to facilitate to this end.

Given the investment which has been made in installing CBT as the mode of delivery for VET in Australia, resistance to changing aspects of the approach is to be expected. Such shifts as incorporating elements of ‘capability’ as an explicit component of the learning objective expand and broaden the previously narrow focus. It is for this reason that the notion of *‘capably drawing upon competency’* is offered as a strengthening of VET outcomes – i.e. valuing capability as an ‘enabling’ attribute in addition to being a personal capacity beyond competency. Figure 10.1 illustrates the application of the LCM model (Hughes 2007a) as a tool

to inform strategic planning and action in respect of achieving an outcome where a VET graduate has the ability and committed motivation to capably draw upon their competency.

Arising from research into the relationship between outcomes from lifelong learning and organisational achievement, Fig. 10.1 is a representation of the LCM model (Hughes 2007a) as it applies to the valuing of an employee being capably competent in a committed manner. The model was derived by viewing research data through the prism of activity theory (Engestrom et al. 1999) and is typically drawn upon as a mediating tool/artefact in interactive activity systems.

Taking the VET teacher as the subject, and nurturing learner capability to draw upon competency as the object, in specifically addressing the VET learning environment, the LCM model suggests a requirement that the VET teacher through their modelling and support of the learner:

- Strengthens, within the learner, valuing of learning and its outcomes for themselves and others ('L' quality in the LCM model)
- Strengthens, within the learner, valuing of a growing to meet challenges together within a work/life culture ('C' quality in the LCM model)
- Strengthens, within the learner, valuing the motivations of self and others for them to capably contribute from their expanding stock of competency ('M' quality in the LCM model)

## **Conclusion for VET Research and Practice as Applies to the Architecture of Innovative Apprenticeship: The *Capably Competent* Way Forward**

From an employer's perspective, as an end-using VET partner, there is a simple logic in the proposition that there is a relationship between what employees, including of course apprentices, know and can do and successful achievement by the organisation. Accordingly, it follows that in instances where an organisation is achieving in changing times, the asset of employees being capably competent is of high value (Hase et al. 1998). In the case of new entrants to a skill/trade such as apprentices or novices, there is an abiding need for them to be both flexible and adaptable to changing industry and workplace developments in technology, future opportunities and the uncertainties of long-term employment and employability, which is a major element of the capability concept and certainly beyond the traditional views of competence

In view of the above suggestions and arguments and taking apprenticeship as the focus, further exploration of the linkage between commitment to self and career (as it adds to social capital), and the richness of the learning journey, beckons.

Our case in this chapter has been that to do so, the definition and application of the formerly narrow view of competence and competency-based VET in Australia needs to be broadened to embrace the capability ideas outlined. In addition, we

argue, this fits with some of the original intent and current, more recent European developments in the operationalisation of modern competence approaches.

Exploration of extrapolation from Australian apprenticeships to other components of Australian VET is seen as a next step. Of course, there is also much to be gained from investigating resonance or otherwise between Australian and European VET contexts. In offering these thoughts, there are clear innovations in apprenticeship possibilities which hold much promise for the individual, the employer and the community at large.

To reiterate, these suggestions for further research are offered against a background of struggle to reclaim a place for 'educationalists' at the Australian VET table. Accordingly, this chapter is an offering of a way forward in which VET partnerships will be strengthened and expanded in a manner whereby the learner (as a partner) is supported in their commitment to drawing upon what they know and can do in their journey.

## References

- ABS. (2008). *4102.0 Australian Social Trends, 2008 – Voluntary work*. Canberra: Australian Bureau of Statistics.
- ANTA. (2004). *Shaping our future: Australia's National Strategy for vocational education and training 2004–2010*. Brisbane: Australian National Training Authority.
- AQF Council. (2009). *Strengthening the AQF: A proposal – Consultation paper*. Adelaide: Australian Qualification Framework Council.
- Becker, G. S. (1975). *Human capital: A theoretical and empirical analysis with special reference to education* (2nd ed.). Washington, DC: National Bureau of Economic research.
- Billet, S., McKavanagh, C., Bevan, F., Angus, L., Seddon, T., Gough, J., Hayes, S., & Robertson, I. (1999). *The CBT decade: Teaching for flexibility and adaptability*. Adelaide: National Centre for Vocational Education Research.
- Burke, J. W. (Ed.). (1989). *Competency based education and training*. London: The Palmer Press.
- Cairns, L. G. (1992). Competency-based education: Nostradamus's nostrum? *Journal of Teaching Practice*, 12(1), 1–31.
- Cairns, L. G., & Stephenson, J. (2009). *Capable workplace learning*. Rotterdam/Boston/Taipei: SENSE Publishers.
- Callan, V. J. (2008). *Accelerated apprenticeships: Apprentices, employers and teaching staff perceptions*. Adelaide: National Centre for Vocational Education Research.
- Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94(Suppl), S95–S120.
- Collins, C. (Ed.). (1993). *Competencies: The competencies debate in Australian education and training*. Canberra: The Australian College of Education.
- Commonwealth of Australia. (2008). *Skills Australia Act (2008)*. Canberra: Commonwealth of Australia.
- Darwin, S. (2007). The changing contexts of vocational education: Implications for institutional learning. *International Journal of Training Research*, 5(1), 55–71.
- DEECD. (2010). *Working lives: Trade and bachelor graduates ten years on*. Melbourne: Victorian Department of Education and Early Childhood Development.
- DEST. (2007). *AQTF 2007: Users' guide to the essential standards for registration*. Canberra: Department of Education, Science and Training.

- Engestrom, Y., Miettinen, R., & Punamaki, R. (Eds.). (1999). *Perspectives on activity theory*. Cambridge: Cambridge University Press.
- Harris, R., Guthrie, H., Hobart, B., & Lundberg, D. (1995). *Competency-based education and training: Between a rock and a whirlpool*. South Yarra: McMillan Education Australia.
- Harris, R., Simons, M., & Moore, J. (2005). 'A huge learning curve': *TAFE practitioners' ways of working with private enterprises*. Adelaide: National Centre for Vocational Education Research.
- Harris, R., Simons, M., & Maher, K. (2009). *New directions in European vocational education and training policy and practice: Lessons for Australia*. Adelaide: National Centre for Vocational Education Research.
- Hase, S., Cairns, L. G., & Malloch, M. E. (1998). *Capable organisations; The implications for vocational education and training*. Canberra: Australian National Training Authority.
- Hughes, L. (2006). *Training packages: A capability way ahead*. Australian Capability Network, Capability for the 21st century conference, Sydney. <http://www.voced.edu.au/content/ngv52594>. Viewed Aug 15, 2012.
- Hughes, L. (2007a). *Applying outcomes of lifelong learning to organisational achievement*. PhD thesis, Deakin University, Geelong. <http://www.voced.edu.au/content/ngv52593>. Viewed Aug 15, 2012.
- Hughes, L. (2007b). *RPL: A pathway to valuing and applauding what volunteers know and can do*. Melbourne: Volunteering Australia (Unpublished).
- Hughes, L. (2008a). *Reducing the management load through deeper knowing of what volunteers know and can do*. Volunteering Australia National Conference, Gold Coast. <http://www.voced.edu.au/content/ngv52596>. Viewed Aug 15, 2012.
- Hughes, L. (2008b). *Capacity building through awakening enthusiasm for further learning*. Community Services and Health Industry Skills Council National Conference, Adelaide. <http://www.voced.edu.au/content/ngv52595>. Viewed Aug 15, 2012.
- Hughes, L. (2009). *RPL as a strengthening of learning outcomes and an "awakening" strategy*. TAFE Development Centre CPR for CBA Learning Series event, University of Ballarat. <http://www.voced.edu.au/content/ngv52597>. Viewed Aug 15, 2012.
- Hughes, L. (2010). The VET status imperative of meeting client "needs" more so than "wants". VISTA Association of VET Professionals conference, San Remo. <http://www.voced.edu.au/content/ngv52598>. Viewed Aug 15, 2012.
- NCVER. (2000). *Research at a glance: Competency-based training in Australia*. Adelaide: National Centre for Vocational Education Research.
- NCVER. (2009a). *Students and courses: Australian vocational education and training statistics*. Adelaide: National Centre for Vocational Education Research.
- NCVER. (2009b). *Apprentices and trainees, Annual 2008*. Adelaide: National Centre for Vocational Education Research.
- NQC. (2009, June). *VET products for the 21st century; Final report of the joint steering committee of the NQC and the COAG Skills and Workforce Development Subgroup*. Melbourne: National Quality Council Secretariat.
- NTB. (1992). *National competency standards: Policy and guidelines* (2nd ed.). Canberra: National Training Board Limited.
- Nussbaum, M., & Sen, A. (1993). *The quality of life*. Oxford: Clarendon.
- Priest, S. (2009). *What is 'social capital' and how can vocational education and training help develop it?* Adelaide: National Centre for Vocational Education Research.
- Pusey, M. (1991). *Economic rationalism in Canberra: A nation building state changes its mind*. Cambridge: Cambridge University Press.
- RSA. (1980a). The Cantor Lectures. *The Journal of the Royal Society for the Arts, CXXVII* (5271), 117–157. RSA, London.
- RSA. (1980b, August). *The Education for Capability manifesto* (RSA Annual Report). RSA, London.
- Rutherford, P. D. (1995). *Competency based assessment: A guide to implementation*. Melbourne: Pitman Publishing.

- Sen, A. (1985). *Commodities and capabilities*. Amsterdam: North-Holland.
- Sen, A. (2010). *The idea of justice*. London: Penguin.
- Skills Australia. (2010). *Australian workforce futures: A national workforce development strategy*. Canberra: Skills Australia.
- Stephenson, J. (1998). The concept of capability and its importance. In J. Stephenson & M. Yorke (Eds.), *Higher education' in capability and quality in higher education*. London: Kogan Page.
- Stephenson, J., & Weil, S. (1992). *Quality in learning: A capability approach in higher education*. London: Kogan Page.
- Townsend, R., Waterhouse, P., & Malloch, M. (2005). *Getting the job done: How employers use and value accredited training leading to a qualification*. Adelaide: National Centre for Vocational Education Research.

# Chapter 11

## Measuring Occupational Competences: Concept, Method and Findings of the COMET Project

Felix Rauner, Lars Heinemann, and Ursel Hauschildt

### Introduction

Why become involved in competence diagnostics for vocational education? The COMET project has two answers to this question. The first has been formulated by the teachers involved in the project. Their interest is to have access to a theoretically sound and empirically tested competence model and to corresponding testing methods in order to gain a better insight of the strengths and weaknesses of teaching and training. From this perspective, a competence model and the methodology of competence assessment should be applicable as an immediate support for the pedagogical work of teachers. A second major reason for the involvement in competence diagnosis is the one that applies as well to PISA and similar projects: large-scale competence diagnostics as the basis for comparative assessment leads to findings whose importance is increasingly recognised by the governance and support systems for vocational education.

In any case, the introduction of model-based competence assessment generates a variety of new knowledge on the quality of vocational education, which should facilitate a constructive dialogue between all stakeholder groups in vocational education and training. On the basis of quantitative data, cooperation at all levels of the VET system can be facilitated.

Large-scale competence diagnosis in VET is an instrument for assuring and developing quality. Large-scale competence diagnosis allows the measurement

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Vocations	Jahr						
	2007	2008	2009	2010	2011	2012	2013
Electronic technician (industrie)							
Electronic technician (crafts)							
Car mechatronic							
Industrial meachnic							
<u>In planning stage</u>							
Care (elderly / nursing)							
Four additional vocations (D), Electronic technicians (VN)							

**Fig. 11.1** The COMET project: an overview. *D* Germany, *C* China, *N* Norway, *SA* South Africa, *CH* Switzerland, *E* Spain, *PL* Poland, *VN* Vietnam

of occupational competence (i.e. domain-specific, cognitive performance) across occupations. Before we present some test results, we will outline and justify the principles of the COMET competence model.

The COMET project has been continuously enlarged and scaled up since its launch with a first pretest in 2006/2007 with a pilot test group of 700 apprentices in the two professions of electronic technician (craft) and electronic technician (industry). It has been extended to a network of eight participating countries with competence diagnostics in seven different professions. In the discussions of the findings of the project, we will focus on the data gathered from the tests in Germany and China (Fig. 11.1).

## Measuring Occupational Competence with COMET

The measurement of occupational competence presupposes a standard-based competence model that can be developed into a measurement model based on sound psychometric criteria (see Martens and Rost 2009, pp. 95 *et seq.*). Competence models have the following functions:

- To operationalise the criteria that have to be met in the context of working on tasks at the workplace as well as the associated principles and objectives of vocational education and training
- To provide sufficiently concrete guidelines for the development of test tasks

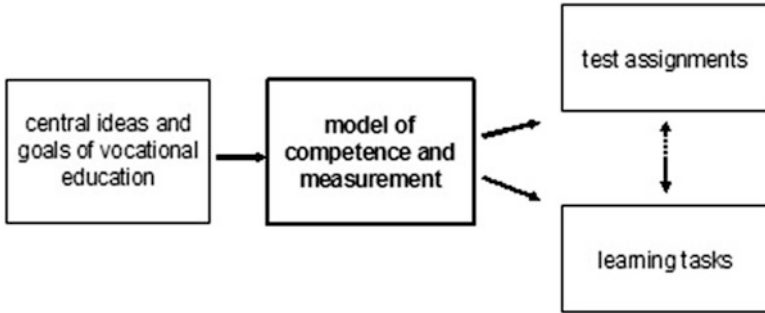


Fig. 11.2 The competence model connects the guiding principles and objectives of vocational education and the construction of test and learning tasks

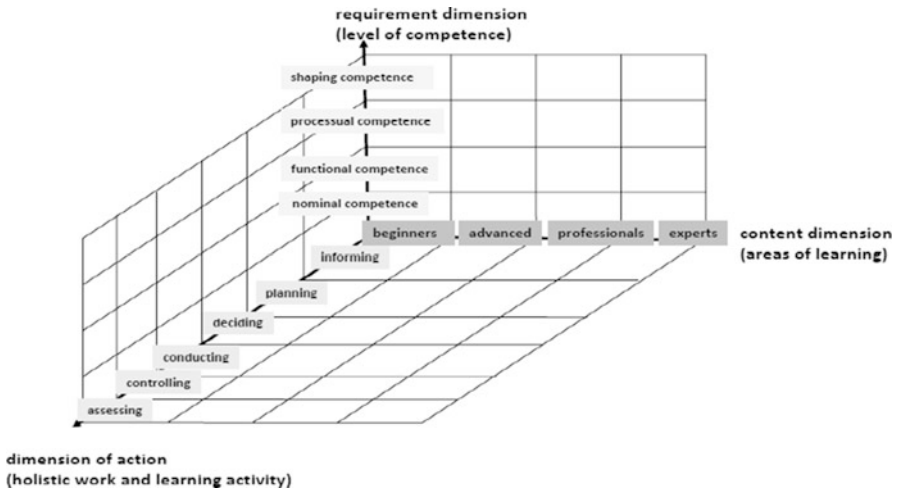


Fig. 11.3 Dimensions of the COMET competence model

***The COMET Competence Model***

The COMET test procedure is based on a competence and measurement model as the foundation to develop test tasks and to evaluate the test results. This model connects the guiding principles and objectives of vocational education and the construction of test and learning tasks (Fig. 11.2).

The principles and objectives of vocational education and training are represented in the COMET competence model which distinguishes between three dimensions (Fig. 11.3):

1. The content dimension
2. The action dimension
3. The requirement dimension

## The Content Dimension

This dimension of the COMET model describes the contents of teaching and learning in a given subject of learning, which in turn is fundamental for the development of a test task. It is based on learners' development from novice to expert in a given profession. Relating test tasks to the content dimension allows for test tasks that match the learners' level of occupational knowledge and skills.

The application of the content dimension for the definition of test assignments in specific occupations and occupational areas makes it possible to achieve an *occupation-specific implementation of a trans-occupational test concept*. Competence levels and the competence development of learners in different occupations and different VET systems can be assessed against to the same competence model.

## The Action Dimension

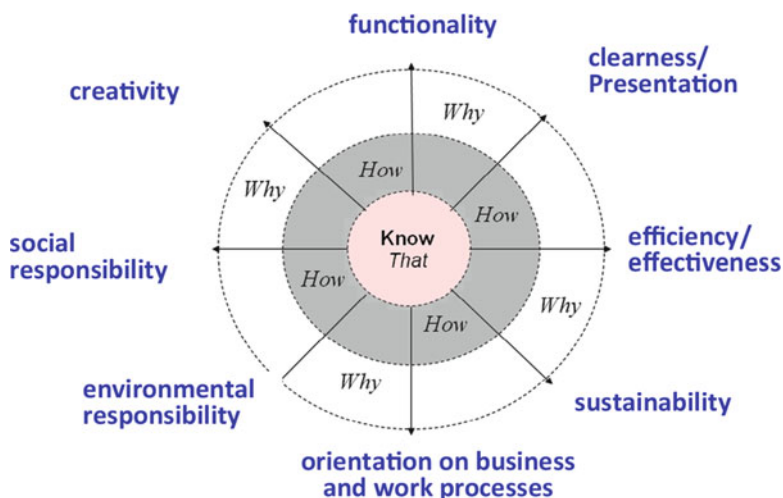
'Action' is a fundamental category of work psychology and pedagogy and refers to the concept of *complete professional action* (Hacker 1998; Volpert 2005). The latter includes the activities to be performed and also the preparatory steps as well as the evaluation of the results according to criteria that are derived from the diverse and sometimes contradictory requirements of the concrete work tasks to be solved.

Along with the pedagogical differentiation of categories of vocational education and professional competence, the paradigm of 'complete professional action' has gained support and acceptance in theory and research. The concept is rooted in a critical reflection of the Taylorist organisation of work and an interest to counteract dequalification in fragmented work processes with a shaping (*Gestaltung*) concept based on labour studies. The core of this concept is that learning requires knowledge of the whole of a professional task – from informing and planning to final evaluation.

Addressing this dimension implies that test tasks cannot be related only to isolated aspects of a work task. Measuring occupational competence means to evaluate if a learner really understands his or her actions, the prerequisites needed and their effects on the companies' work processes and the final product. But, this is only one (necessary) dimension of a competence model. Without links to the requirement dimension, complete action can become meaningless (see below).

## The Requirement Dimension (Level of Competence)

The requirement dimension represents levels of professional competence that build on top of one another. These competence levels are defined on the basis of skills that are related to the (holistic) solution of professional work tasks. The objective and subjective requirements for the work and the solution for professional tasks are directly related to the relevant professional skills. The requirement dimension in



**Fig. 11.4** The criteria for the complete or holistic solution of professional tasks and work process knowledge

the COMET model follows the criteria of holistic problem solving and thus allows for the concrete description (in terms of content) of empirically tested competences at different levels.

### ***Requirement Dimension: The Concept of Holistic Problem Solving of Vocational Tasks***

‘Professional acting competence’ (*berufliche Handlungskompetenz*) implies that the competent person is not only capable of carrying out work tasks *completely* (as in the action dimension) but also of reflecting and evaluating his or her professional activities in their professional and social context. This means that a professional activity is always performed in a work context in which the relevance can also be identified and evaluated by the individual.

The requirement dimension is constructed from the criteria of the work context. The quality of different ways to carry out a task can be analysed by the degree these criteria are met. For a good solution, one sometimes has to weigh between competing criteria. These criteria are derived from the objective circumstances and the subjective expectations concerning the content and organisation of work in society (Fig. 11.4).

When the steps of a complete professional activity are related to the criteria of a *holistic solution of professional tasks*, the concept of complete professional action is transformed into the category of *complete (holistic) problem solving*, which is fundamental for the design of vocational training processes and the modelling of professional competence.

### ***Requirement Dimension: Levels of Competence and the Concept of Holistic Problem Solving***

The theoretical definition of the competence levels in the COMET competence model is based on a concept of four stages of literacy as proposed by Bybee (1997) and also been used in the PISA project. According to this concept, the COMET project distinguishes between:

- *Nominal scientific and technological competence*: at this first level of competence, apprentices have superficial conceptual knowledge which is not yet applicable in practice in terms of occupational ability. Trainees with only nominal competence are regarded as a risk group. Their actual competence level is equivalent to the level of unskilled or semi-skilled work. Since the level of occupational competence is not reached at this stage, we have not included this level in the model.
- *Functional competence*: at this stage, instrumental abilities in a discipline are based on the requisite elementary subject knowledge and skills, although their connections and their occupational applications have not yet been fully assimilated. ‘Specialisation’ amounts to non-contextual specialised knowledge and corresponding skills.
- *Processual competence*: occupational tasks are interpreted and addressed in terms of their relationship to work processes and workplace situations. Aspects such as economic viability and customer and process focus are now taken into account.
- *Holistic shaping competence*: at this level of competence, occupational tasks are considered in their full complexity with due regard to the diverse operational and social conditions in which they are performed and to divergent requirements in terms of the work process and its outcome.

The two-dimensional COMET competence model (Fig. 11.5) not only distinguishes between the *expectations dimension* (competence levels) as described above but is also related to the criteria or dimensions of professional problem solving, which we call the *content dimension*. These eight criteria can be specified according to assumptions as summarised in Table 11.1:

### ***COMET Test Instruments***

The following test instruments were used in the COMET project in China and in Germany:

- Open test and learning tasks
- Context questionnaire
- Questionnaires of the students’ test motivation (interrogation of teachers and students)

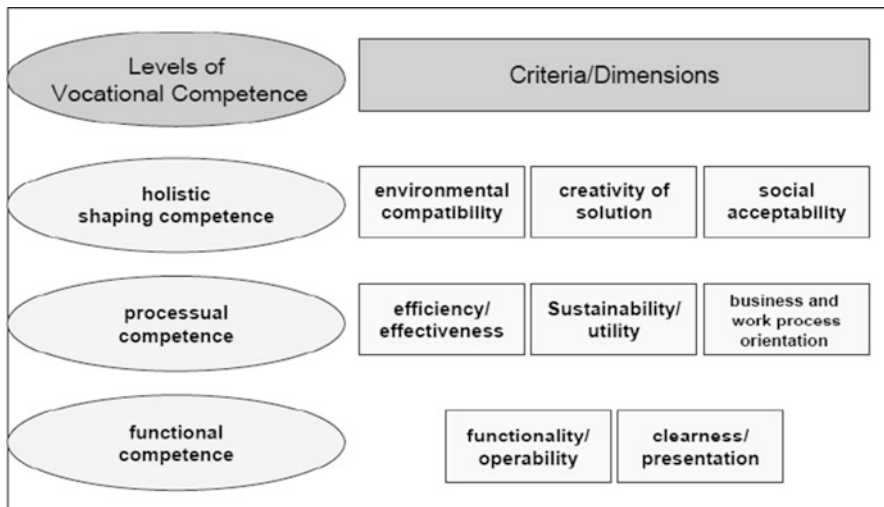


Fig. 11.5 Levels and criteria of professional competence (Rauner et al. 2007a)

In addition to this, a rating questionnaire was introduced in order to evaluate the different competence criteria (one-time 2009) and a test of cognitive abilities (CAT, subtest figure analogies). These two instruments will not be used in further COMET projects and tests.<sup>1</sup>

### Open Test and Learning Tasks

Experts (practitioners) in an occupational field develop COMET test tasks on the basis of the competence model. In practice, vocational tasks do not have one single solution. In contrary, in real work situations, it is often necessary to weigh different solutions according to various criteria that come into play (as already shown in Fig. 11.4). Vocational competence requires a well-thought-out holistic approach to problem solving. In order to test vocational competences based on the model of holistic problem solving, COMET uses a concept of open test and learning tasks, which allow for a variety of solutions.

Although it is difficult to compare divergent national VET systems, the COMET concept can be adapted to be used in countries and regions with different VET systems. This is achieved by the concept of *professional validity*. This means that the validity of test tasks has to be demonstrated with reference to the professional work and the competences embodied in it. Whenever a COMET project is carried

<sup>1</sup>Results of CAD subtest figure analogies have been published in 182f.

**Table 11.1** Criteria for measuring occupational competence

Functionality/operability	This criterion relates to instrumental specialised competence and hence to non-contextual specialised knowledge. The ability to perform a task functionally is basic to all other requirements in the realm of occupational problem solving
Clearness/presentation	The outcome of occupational tasks is anticipated in the planning and preparation process and is documented and presented in such a way that the task setters (managers or customers) can communicate and assess the proposed solutions. That is why this is a basic form of occupational activity and vocational learning
Sustainability/utility	Occupational work processes and assignments always relate to customers, who are interested in high-utility value and sustainable solutions. In work processes with an extensive division of labour, the aspects of utility value and sustainability often fade from the minds of employees as they go about their tasks. By emphasising sustainable solutions, vocational training helps to counteract this phenomenon
Cost-effectiveness/efficiency	Occupational tasks must, in principle, be performed economically. The competence of skilled workers is reflected in their consideration of cost-effectiveness in the context of their occupational tasks
Business and work process orientation	This criterion covers aspects of task performance that take account of the higher and lower tiers of the company hierarchy (the hierarchical aspect of the business process) and of the upstream and downstream links in the process chain (the horizontal aspect of the business process)
Social acceptability	This criterion primarily relates to the ergonomics of the work process and workplace organisation, to health and safety and, where appropriate, to the social aspects of working life that transcend life on the shop floor
Environmental compatibility	This criterion is relevant to almost all work processes. It is not a question of general environmental awareness but of the environmental requirements specific to particular occupations and specialisations in so far as they affect work processes and their outcome
Creativity	This indicator plays a leading role in the performance of occupational tasks. One reason for this is the extreme variations in the scope for creativity in the performance of occupational tasks in different situations

out in a specific country, as a first step, experts have to decide whether the tasks are based on work tasks and situations typical for the profession in this country.

Open test tasks are COMET's core test instrument for the test day. But, before the learners participate in their first COMET test, open learning tasks are introduced in VET classes several months before the first test is conducted.<sup>2</sup>

<sup>2</sup>For an example of a test task, see Rauner et al. (2007b).

The form of open test tasks, developed in cooperation with vocational teachers involved in the COMET project, is in accordance with typical order transactions in professional work. Every test participant works on two tasks. A complex, open task takes two periods of 120 min each, allowing the diagnosis of occupational competence in a way which represents the core and occupation-specific competences and capacities of a skilled worker.

For each test task, a relevant ‘solution space’ has been elaborated, which defines the scope or variety of approaches to solve it. For each criteria or dimension (see Fig. 11.5, above) a set of sub-criteria has been defined. These sub-criteria are rated later on by the participants. The competence model’s as well as the rating sheet’s high acceptance had a positive influence on inter-rater reliability. High inter-rater reliability, i.e. different raters evaluating the same solution in the same way, is a precondition to be able to gather valid and reliable test results (Rauner et al. 2011).

### **Rater Training and Inter-rater Reliability**

In order to help the raters to develop a common understanding of the expectations for the solutions of the work assignments, training is regularly carried out within all the COMET projects of those responsible for rating. Each training session follows a similar structure.<sup>3</sup> In general, the first rater training takes place shortly before or after the first COMET test round. In order to secure a high degree of inter-rater reliability, the rater training seminar is based on individual and group work on the evaluation of sample solutions for each of the test tasks. The trainers’ rating scale (see Table 11.2) and the solution space available to each of the test solutions are also introduced and discussed during this seminar.

In COMET tests, each test participant is rated by two raters on an anonymous basis according to 40 different items. The degree of correspondence of the rater assessments is calculated after each rater training seminar with the help of the Finn coefficient. The Finn coefficient calculated after the end of the training seminars in Hessen, Germany, in 2009 and in Beijing 2010 has reached remarkably high scores in the last rounds of rating. Without exception, the Finn coefficient is within the range of high reliability, i.e. the critical value of .7, which had been defined for this study have always been reached or exceeded.

### ***Constraints of the Measurement Instruments***

The measurement of professional competence requires that in the first place, the measurement tools are based on standardised measurement methods and that professional knowledge and skills that can be *measured*. Nevertheless, many aspects

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<sup>3</sup>The structure of the rater training will be described in detail in Rauner et al. (2012).



of professional skills, including important ones, escape the methods of quantitative measurement, though. Tacit knowledge (Polanyi 1966; Neuweg 1999; Fischer 2000) is often the basis of important professional skills that can be demonstrated in practice but not described in the form of explicit knowledge.

At this point, large-scale competence diagnostics including COMET reach their limits for two reasons:

1. Large-scale competence diagnostics depend on standardised test procedures. The latter are incompatible with the idea of assessing practical skills in real work situations.<sup>4</sup>
2. The realisation of a standardised observation procedure for the assessment of professional competence by proven experts would require an amount of people and time resources that rules out the feasibility of such a project from the outset.

To determine the limits of competence diagnostics, it is necessary to be aware of those competences that cannot or can only be measured with greater effort or the adoption of an additional methodology. These specific aspects of learning and skills can be specified as follows:

- Tacit knowledge
- Occupational aptitude
- Social skills
- Abilities that come into play in interactive work processes
- Manual dexterity

An overview of the scope and limits of the measurement instruments used in the COMET projects is shown in Table 11.3.

## ***Context Survey***

In order to collect further information on the students' background as well as on the context of learning at school and at the workplace, the COMET project uses an additional questionnaire that covers these three major blocks of questions (Table 11.4):

It aims at identifying possible variables influencing the development of occupational competence. The scales measure vocational identity, occupational and organisational commitment and abstract 'work ethics' (*Arbeitsmoral*). Collecting

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<sup>4</sup>The question as to whether it is possible to assess professional skills with the help of standardised 'work samples' and under the conditions of a standardised simulation of work practice cannot be expanded on here. It can be assumed that the use of simulation techniques, e.g. in the training of pilots by means of flight simulators or in the evaluation of skills in geriatric care by the 'objective structured clinical evaluation' (OSCE), allows for the assessment of significant parts of professional skills. However, these techniques are not a complete substitute for the evaluation of qualifications in the context of real work processes.

**Table 11.3** Possibilities and limits of measuring occupational competence

Measurement possible requiring a great deal of effort	
Cognitive domain-specific dispositions	Situated professional qualifications
Competence levels	Implicit professional knowledge (tacit knowledge)
Related to professions as well as trans-professional, independent of VET forms and structures	Individually situated professional ability (professional aptitude)
Of test groups on the basis of individual test results	Learning gains related at curricula
Competence profiles and shapes	Craftsmanship
Heterogeneity of competence levels and shapes	Social competences (with reservations)
In combination with context data, insights into a multitude of relations relevant for steering and developing VET	Skills and capacities displayed in the interactive course of work (with reservations)
e.g.:	Competences displayed in creative skills
Educational systems	
Contents and forms of occupational learning	
Cooperation of learning venues and curricula	
Work organisation	
School organisation	
International comparisons	

**Table 11.4** Contents of the COMET context questionnaire

Personal background	Context of in-company training	VET school context
<i>Socio-economic background</i>	<i>General characteristics of company</i>	<i>General characteristics of school</i>
<i>School performance and previous learning career</i>	<i>Work process orientation of training</i>	<i>Pedagogical context</i>
<i>Training motivation</i>	<i>General training situation at company</i>	<i>Work process orientation</i>

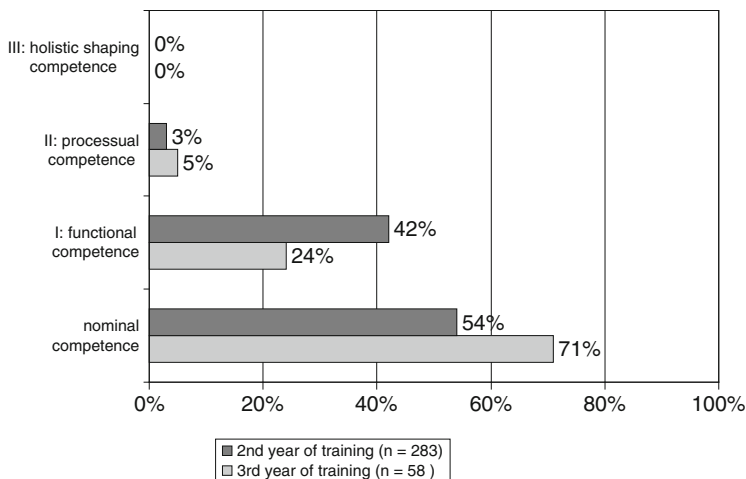
data about the test persons’ biography as well as about the learning environment at the school and company allows for comprehensive interpretations of the COMET results about the test persons’ vocational competence development. Major recommendations for teachers and trainers and VET policymakers can be derived from this research.

### ***Some Results***

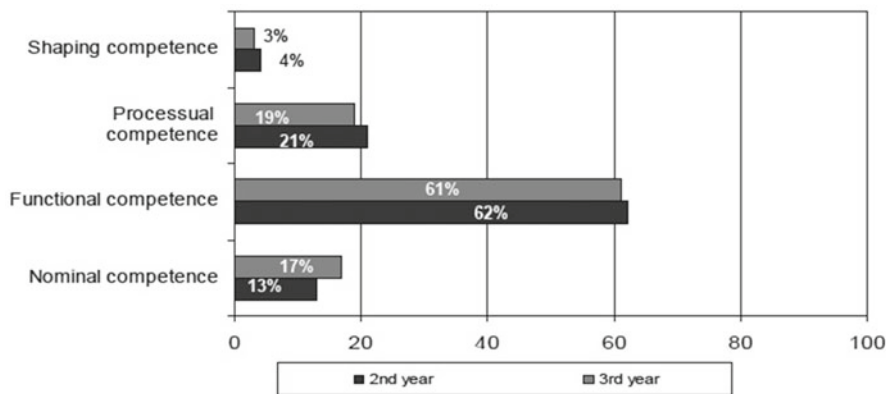
#### **No Competence Development from the 2nd to the 3rd Year of Training**

Even though the overall performance of Chinese VET students and German apprentices in electrical engineering varies considerably and students reach different competence levels, it is striking that in both cases, there is no or no significant

**a**

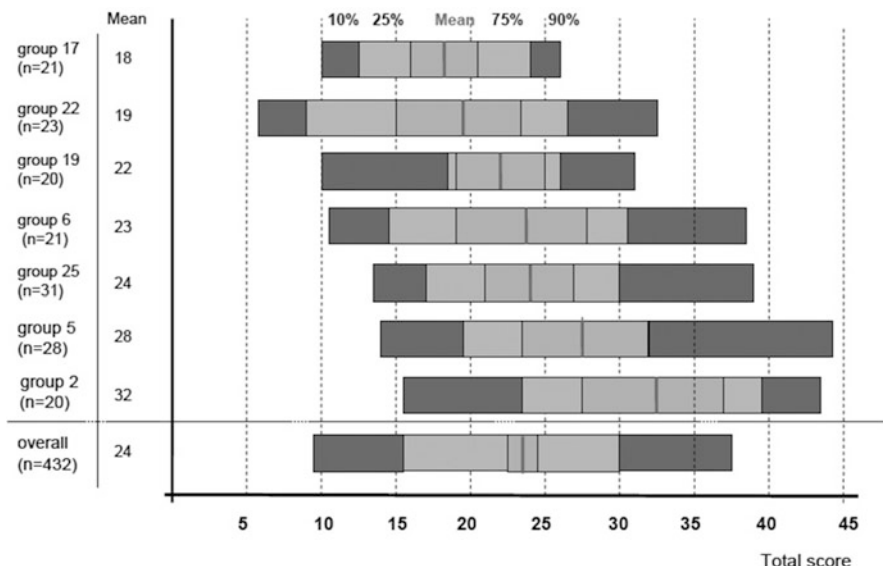


**b**



**Fig. 11.6** (a) Students’ levels of competence, according to year of training in Beijing 2008 (VET schools and VET colleges, students of electrotechnology). (b) Students’ levels of competence, according to year of training in Hessen, Germany (electronics technicians for process engineering, Hessen)

growth in competence from the second to the third year of training (Fig. 11.6). In the case of China, the context survey hinted at problems of collaboration between learning venues, leading to friction in the transition from 2 years of school-based training to the third year of in-company training. In the German case, the timing of examinations seems to play a role, having an impact on students’ motivation.



**Fig. 11.7** Distribution of professional competence scores by vocational classes in Germany (COMET results 2009)

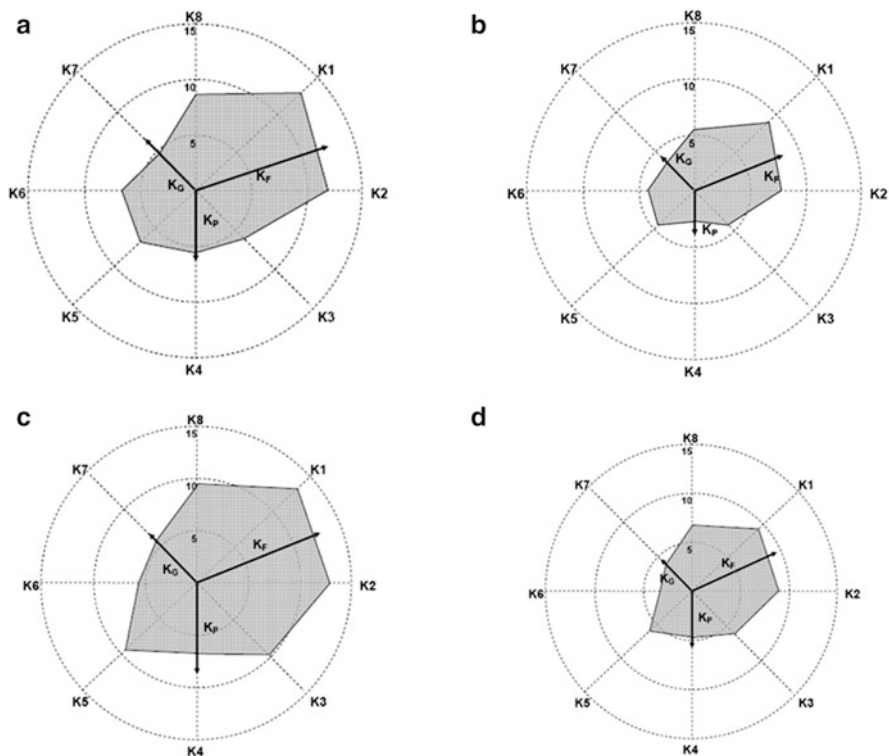
### Heterogeneity Between High- and Low-Performing Trainees

More than any other type of school, VET schools are confronted with a strong heterogeneity of learners. The results of the COMET tests in Germany therefore call for an introduction of new forms of teaching and training in order to meet the different demands of students/apprentices. Heterogeneity does not only exist at the level of the test population but also at school and even class level. Although the difference between the learning groups is quite low in terms of average performance, the variation in the performance scores is very high, which can be shown by percentile bands (Fig. 11.7). Apart from the different groups’ mean, these bands show the spread of results in the given groups (here based on classes at VET schools).

Heterogeneity also plays an important role in Chinese vocational schools. Additionally, there is high variation between schools.

### Individual Competence Profiles of Learners

The individual performance of a test person can be illustrated by radar charts. Such charts contain two kinds of information: the overall score as a competence level as well as the scale of the eight competence criteria assessed.



**Fig. 11.8** Comparison of average competence profiles China – Germany. (a) Best class vocational college China,  $n = 15$ , (b) Vocational colleges China,  $n = 341$ , (c) Electricians (industry) Hessen,  $n = 288$ , (d) Electricians (crafts) Hessen,  $n = 106$

Figure 11.8 compares the competence profile of the best Chinese vocational college classes with the average profiles of German apprentices (electrotechnology) in crafts and industry. For the components of functional and shaping competence, the Chinese students show similar values to the German crafts apprentices, but for all three components of processual competence – efficiency/effectiveness, orientation around value/sustainability and work and business orientation – their results are clearly worse.

The analysis of the radar charts shows that the criteria of ‘environmental compatibility’ and ‘social acceptability’ have a low profile in Germany as well as in China. A characteristic difference between German and Chinese test groups is the different homogeneity of competence profiles. Chinese students seem to have an underdeveloped concept of work. Thus, the test tasks were solved significantly less often at the level of processual and holistic shaping competence. This does not change in the third year of training, which is carried out at the workplace.

## Outlook

After 6 years of test experience, the COMET concept of measuring and analysing vocational competence has proved its relevance as a reference model to shape vocational education processes in practice. It allows measuring occupational competence across occupations and on an international scale across VET systems. COMET test results show exactly if and at what level future expert workers are able to solve occupational tasks completely. The COMET competence model including context research (see Chap. 12) has been tested and verified and is now open to further international projects and test groups.

## References

- Blankertz, H. (1983). Sekundarstufen II – Didaktik und Identitätsbildung im Jugendalter. In: D. Benner, H. Heid, H. Thiersch (Hg.), *Beiträge zum 8. Kongress der Deutschen Gesellschaft für Erziehungswissenschaft*. ZfPäd, Beiheft 18: 139–142.
- Bybee, R. W. (1997). *Achieving scientific literacy: From purposes to practices*. Portsmouth: Heinemann.
- Collins, A., Brown, J. S., & Newman, S. E. (1989). Cognitive apprenticeship: Teaching the crafts of reading, writing and mathematics. In L. B. Resnick (Ed.), *Knowing, learning, and instruction. Essays in honour of Robert Glaser* (pp. 453–494). Hillsdale: Erlbaum.
- Erdwien, B., & Martens, T. (2009). Die empirische Qualität des Kompetenzmodells und des Ratingverfahrens. In F. Rauner et al. (Eds.), *Messen beruflicher Kompetenzen* (2nd ed., Vol. II, pp. 62–82). Münster: LIT Verlag.
- Fischer, M. (2000). *Von der Arbeitserfahrung zum Arbeitsprozesswissen. Rechnergestützte Facharbeit im Kontext beruflichen Lernens*. (Habilitationsschrift). Opladen. Fischer, M., Jungeblut, R., Römmermann, E. (1995). Jede Maschine hat ihre eigenen Marotten! Instandhaltungsarbeit in der rechnergestützten Produktion und Möglichkeiten technischer Unterstützung. Schriftenreihe Berufliche Bildung. Institut Technik und Bildung. Bremen: Donat.
- Hacker, W. (1998). *Allgemeine Arbeitspsychologie*. Bern: Hans Huber Verlag.
- Havighurst, R. J. (1972). *Developmental tasks and education* (3rd ed.). New York: David McKay, (1948).
- Lave, J., & Wenger, E. (1991). *Situated learning. Legitimate peripheral participation*. New York/Cambridge, UK: Cambridge University Press.
- Martens, T., & Rost, J. (2009). Zum Zusammenhang von Struktur und Modellierung beruflicher Kompetenzen. In F. Rauner et al. (Eds.), *Messen beruflicher Kompetenzen* (2nd ed., Vol. I). Berlin: LIT Verlag.
- Neuweg, G. H. (1999). Könnerschaft und implizites Wissen. Zur lehr-lerntheoretischen Erkenntnis- und Wissenstheorie Michael Polanyis. Münster: Waxmann.
- Polanyi, M. (1966). *The tacit dimension*. Garden City: Doubleday & Company.
- Rauner, F. (2007). Practical knowledge and occupational competence. *European Journal of Vocational Training*, 40(1), 52–66.
- Rauner, F., Grollmann, P., & Martens, T. (2007a). *Messen beruflicher Kompetenz(entwicklung)*. ITB – Forschungsbericht, 21/2007. Bremen: Institut Technik und Bildung (ITB).
- Rauner, F., et al. (2007b). *KOMET* (Band 1). Münster: Lit.
- Rauner, F., et al. (2009a). *Messen beruflicher Kompetenzen. Grundlagen und Konzeption des KOMET-Projekts* (2nd ed., Vol. I). Berlin: LIT Verlag.

- Rauner, F., et al. (2009b). *Messen beruflicher Kompetenzen. Ergebnisse KOMET 2008* (Bildung und Arbeitswelt series 2nd ed., Vol. II). Berlin: LIT Verlag.
- Rauner, F., Heinemann, L., Maurer, A. (2011). *COMET China: Implementation of learning areas: Testing a competence model as a basis for test tasks and learning tasks* (pilot project large – scale competence diagnostics in Beijing VET Schools and VET Colleges) (IBB Working Paper). Bremen University.
- Rauner, F., et al. (2012). *Competence Development and Assessment in TVET (COMET) – Technical framework and empirical results* (Technical and Vocational Education and Training Series). Dordrecht: Springer.
- Terhart, E. (1998). Lehrerberuf. Arbeitsplatz, Biografie und Profession. In: H. u. a. Altrichter (Hrsg.), *Handbuch der Schulentwicklung* (pp. 560–585). Innsbruck: Studien-Verlag.
- Volpert, W. (2005). Arbeitsgestaltung und Arbeitsorganisation. In F. Rauner (Ed.), *Handbuch Berufsbildungsforschung*. Bielefeld: W. Bertelsmann Verlag.

# Chapter 12

## Occupational Identity and Motivation of Apprentices in a System of Integrated Dual VET

Ursel Hauschildt and Lars Heinemann

### Introduction

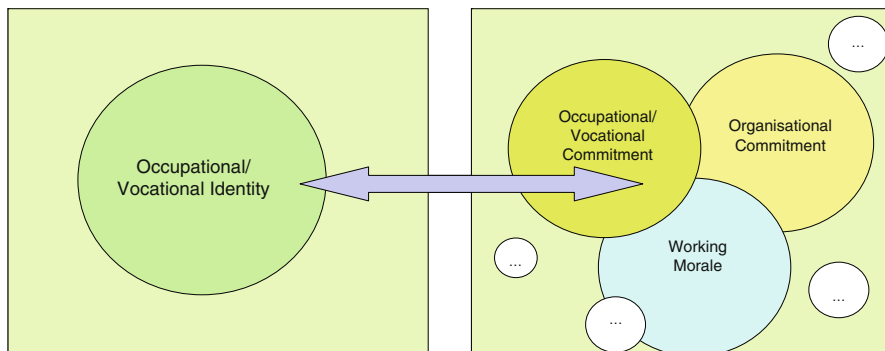
When analysing apprentices' motivation and the development of their occupational identities, one tends to look at these concepts as individual inputs into the process of acquiring competences in a development from novice to expert. But as developing competences is intrinsically linked to acquiring a vocational identity (Blankertz 1983) as a member of a community of practice, such identity is an aim of vocational education as well. Apprentices' motivation, too, is not a static factor. Right on the contrary, it can change during the course of apprenticeship and depends on the organisation of learning processes at the company and/or at school as well as in their relation to the development of vocational competences.

### Methods and Research Design

Within the frame of the COMET project (Rauner et al. 2008, 2009, 2011) and the project 'Innovative Berufsbildung 2010' (Piening and Rauner 2008), Bremen TVET Research Group has developed a model of competence measurement, which was tested at 2,460 apprentices in Bremerhaven, Bremen and Hesse, Germany. The basis of the commitment scale is a concept of three interrelated aspects of commitment, which have an impact on occupational identity and thus competence development (Fig. 12.1):

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**Fig. 12.1** Occupational identity and interrelated fields of commitment

1. Occupational commitment, which is the basis of one's identification with his or her profession (Cohen 2007)
2. Organisational commitment, which refers to an apprentices' identification with the company he or she is working in
3. Working morale, representing attitudes towards work that are not related to the profession but are based upon other elements in one's personality, i.e. accuracy, reliability etc.<sup>1</sup>

In order to measure sources of motivation, three different scales have been developed: abstract working morale and motivation related to the organisation and the occupation. Another scale measures different aspects of development of vocational identity – the will to relate one's work to the occupation, the companies' work processes and to shape work and technology.

### ***Measurement Instruments***

All scales which have been used within these projects are built on former or recent research in this area and were adapted to the particular situation of vocational education and training. The scale which has been applied for the field of occupational commitment is based on the achievements in organisational psychology, namely, the 'career commitment measure' by Blau (1988, 1993) as well as Carson and Bedeian (1994) and the scale on 'occupational commitment' by Meyer et al. (1993).

<sup>1</sup>We understand working morale as an unquestioned willingness to carry out work tasks based on general work habits such as reliability, punctuality/timeliness and accuracy. These habits do not relate to a vocation but to work as such. Working morale is thus different from the expression work ethics, which instead does relate to the pursuance of one's vocation. This definition is based on the works of Carlo Jäger (1988).

Among the available scales for assessing organisational commitment, especially a widely accepted scale by Meyer and Allen (1991) was used. Here, a conceptualisation is proposed that refers to the three dimensions ‘normative’, ‘affective’ and ‘continuance’, i.e. loyalty to the organisation, an affective commitment to the organisation and the willingness to stay in the organisation.

Working morale can be characterised as an attitude to work irrespective of the concrete occupational contents. The appraisal of work *as such* has a twofold tradition. On the one hand, this attitude corresponds to the extrinsic work motivation required for industrial mass production as analysed in studies by Carlo Jäger. Assignments had to be fulfilled without giving much thought to them. Another tradition was described by Max Weber (1922) as the ‘Protestant ethic’. Here, a similar attitude emerges from an intrinsic motivation of secular asceticism. In this survey, only three items were used to study punctuality, reliability and motivation without referring to the concrete contents of occupation and work.

The study of 1,560 apprentices in the town of Bremerhaven puts a focus on the relations between vocational identity, motivation and the organisation of work and learning (Heinemann, Rauner and Maurer 2009) in more than 40 professions. One of the central questions was whether occupational or organisational commitment had a stronger influence on the development of occupational identity and motivation.

Apart from the three scales measuring the normative aspects of commitment, a fourth scale measures vocational identity. Vocational identity has a different meaning and significance for each profession. In order to obtain comparable results reflecting the development of vocational identity of apprentices in all professions, it is necessary to exclude all items that are specifically related to only one or a few professions. For this reason, this scale refers mainly to those cognitive and emotional dispositions that come along with the development from novice to expert and lead to professional action competence. Three aspects were analysed in this respect:

- Orientation (concern and motivation to understand the context of one’s actions/work process orientation)
- Shaping (concern and motivation to participate in shaping/designing one’s work and working techniques)
- Quality (concern and motivation to deliver high-quality products or services)

The scale measuring vocational identity is thus measuring the extent up to which an apprentice is referring to these three aspects concerning his or her individual profession.

All four scales composed of these items have proved a good quality. Scales with six items have reached with values of 0.87 and 7.3 for Cronbach’s alpha which shows a high correspondence of each of the scales’ items (Table 12.1). The scale with only three items (working morale) has reached a score of 0.52 Cronbach’s alpha which was nevertheless considered as sufficient as well, due to the fact, that only 3 items had been used.

The quality estimates based on the calculation of Cronbach’s alpha have been confirmed by scree plots that show the number of different components to which a variety of items can reasonably be reduced. The factor analysis of the six items of

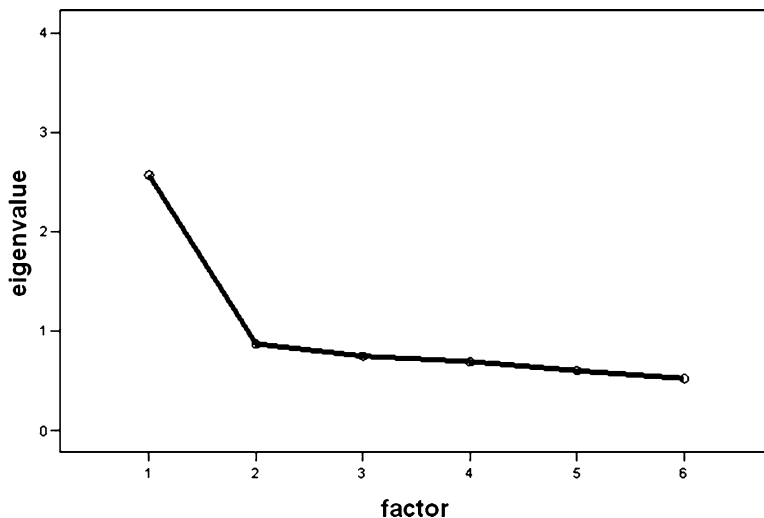
**Table 12.1** Instruments for the measurement of occupational commitment, organisational commitment, working morale and professional identity and their quality

Scales and items	Cronbach's alpha
<i>1. Scale for the measurement of occupational commitment</i>	0.87
I like to tell others which profession I am learning now	
I 'fit' to my profession/I work well with my profession	
I am not that interested in my profession	
I am proud of my profession	
I would like to continue working in my profession after training	
I feel kind of home in my profession	
<i>2. Scale for the measurement of organisational commitment</i>	0.87
I feel kind of home in my company	
I would like to continue working for my training company, even when I have the opportunity to work for another employer	
I like to tell others about my company	
I don't feel very attached to my company	
I 'fit' to the company	
I care about my company's future	
<i>3. Scale for the measurement of working morale</i>	0.52 (0.7) <sup>a</sup>
I am motivated no matter what my work tasks are	
I am reliable no matter what tasks I get	
I am always on time – no matter whether my work tasks require this or not	
<i>4. Scale for the measurement of vocational identity</i>	0.73
I am interested in how my work contributes to the overall company's work flow	
'Profession' means to submit quality	
I am deeply involved in my professional tasks	
I know what the tasks I carry out have to do with my profession	
I sometimes think about way how to improve my work or its quality	
I would like to have a say on my work content	

<sup>a</sup>The scale composed of these three items has a relatively low score for Cronbach's alpha of 0.52. This index generally tends to have low figures for short scales, that is why this scale can still be considered as psychometrically acceptable (cf. Niemi et al. 2004). If the scale was extended to six items like the others with the help of similar items, the result for Cronbach's alpha would be a score of 0.70.

'vocational identity' clearly shows that the items are loading on one single factor only. The eigenvalues of the remaining factors are smaller than 1; accordingly, additional factors would not help to explain the distribution of values. At the same time, the scale is one-dimensional. The responses to the different items can be attributed to one single factor (Fig. 12.2). Scree plots relating to the three other scales led to similar results.

In addition to all four scales described above, other established scales have been used to measure different aspects of the organisation of work and learning at the workplace, the school and the extent of cooperation between the two. All scales had been tested in pretests and have been psychometrically verified and proved reliable (Heinemann and Rauner 2008).



**Fig. 12.2** Scree plot for the scale 'vocational identity', extraction method: principal components analysis

### The Sample of Bremerhaven

The Bremerhaven study in 2008 is based on a sample of 1,560 apprentices in 50 different professions. Fifty-five percent of them were learning technical vocations at the Gewerbliche Lehranstalten Bremerhaven, and forty-five percent were apprenticed in vocations related to commerce at the Kaufmännische Lehranstalten Bremerhaven. A total of 43% were doing their first year of training, 34% were in their second year and 22% were apprentices in the third year of training.

Sixty-three percent of the trainees were male; thirty-seven percent were female. Most of the professions examined were dominated by male apprentices. Eighty-one percent of the apprentices were of German-speaking families; the remaining nineteen percent originated from families with a migrant background, i.e. where other languages (Russian, Turkish or other) were spoken. A total of 23% were living in rather poor neighbourhoods.

Among the 50 vocations, there were 23 where the number of apprentices was sufficiently high in order to allow for a more detailed examination (Table 12.2).

Fifty-four percent of all apprentices were doing an apprenticeship in their favourite profession. This is especially noticeable with regard to certain professions as shown in Table 12.2. About three quarters of those learning to be cooks and of those learning the profession of car mechatronic quoted that this was their favourite profession and that they always wanted to learn it. If – on the contrary – one looks at management assistants in wholesales, this figure is only 18%.

Almost 50% of the apprentices had a school leaving certificate of a secondary high school, 11% came from secondary modern schools, 11% were school leavers

**Table 12.2** The 23 most quoted vocations of the Bremerhaven sample in absolute figures and their significance as a 'favourite profession' for learners

Vocation	Sample size	Favourite profession (%)
Clerk	123	41
Car mechatronic	120	74
Hair dresser	108	69
Professional driver	102	62
Office clerk	102	48
Electronic technician (building services engineering)	78	60
Forwarding merchant/logistics manager	74	38
Management assistant in wholesale and foreign trade	68	18
Sales clerk	58	50
Cook	57	77
Industrial clerk	55	46
Industrial mechanic	48	70
Metal worker	44	61
Plant mechanic/systems mechanic	42	43
Judicial clerk	41	36
Retailer	38	51
Office clerk/tax clerk/tax account assistant	35	29
Mechatronics technician	32	64
Construction mechanic	32	40
Automobile sales management assistant	30	52
Clerk in public administration	28	46
Cosmetician	24	67
Electronic technician (wind energy)	18	53

with an advanced technical certificate (entrance qualification of polytechnics or colleges) and another 13% obtained the higher education entrance qualification Abitur.

Most of the apprentices (42%) were learning their profession in medium-size companies, i.e. companies with 10–49 or 50–99 employees. A proportion of 26% were trained in smaller companies with 1–10 employees, and 31% are apprentices in larger enterprises.

## Results

The prevailing conditions and circumstances under which apprenticeship takes place have a strong impact on the apprentices' occupational identity.

But before going into deeper analysis, it is necessary to examine the profiles of different types of commitment and working morale and vocational identity related to the professions analysed.

The degree of occupational commitment and organisational commitment varies strongly with regard to some professions. Among others it strikes, that apprentices

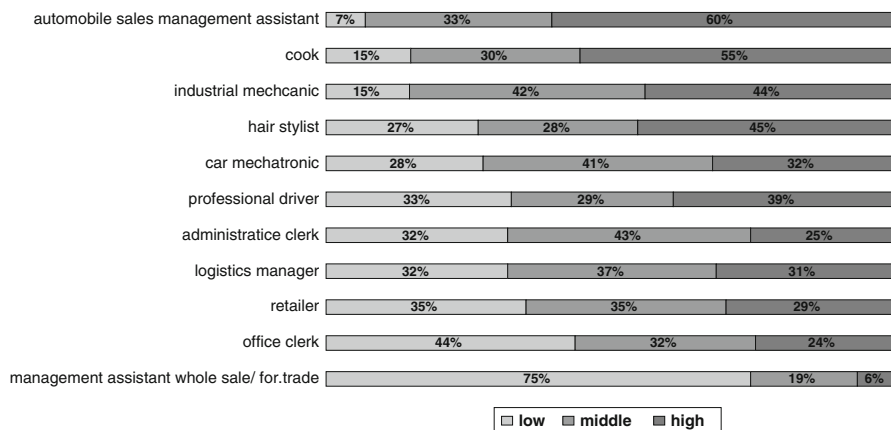


Fig. 12.3 Characteristics of occupational commitment in selected vocations (extract)

in professions like automobile sales management assistant, cook or industrial mechanic reach relatively high levels in occupational commitment (Fig. 12.3). On the other hand, cooks do not seem to have a strong commitment towards their organisation, and also, their working morale (see working morale Fig. 12.5) is lower than average. When it comes to vocational identity, they again perform much higher and reach a second best result.

It is also interesting to note that, according to this study, apprentices in such preferred professions like car mechatronics or industrial mechanics do not seem to max out the identification potentials related to their professions.

Commerce-oriented professions like industrial clerks, management assistants in wholesale and foreign trade, logistics clerks and the like are drifting apart. Whereas apprentices in automotive sales are highly motivated and content with their profession, the majority of learners in retail or industrial clerks are scoring in average regions, and apprentices in wholesale and foreign trade are ranking at lowest levels (Figs. 12.3, 12.4, 12.5, and 12.6)

If one examines the scale of working morale, again automobile sales assistants reach highest scores but this time followed by sales clerks and retailers who otherwise rank lower. Judicial clerk apprentices also score high in working morale, whereas in terms of organisational and occupational commitment, they only achieve lowest levels. A relatively low vocational identity in these vocations might be compensated by such secondary values here.

In general, vocational identity and vocational commitment strongly relate, a result which was expected since the will to become an expert in one’s profession should correspond with the commitment towards the vocation itself. For the correlation between vocational identity and vocational commitment on the one hand and occupational commitment on the other hand, it can be followed that vocation-specific differences in the organisation and shaping of technical and vocational education and training play a crucial role. A working environment,

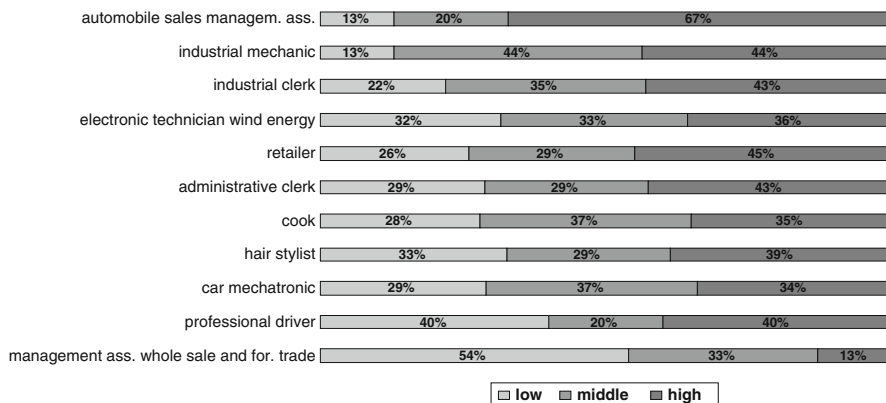


Fig. 12.4 Characteristics of organisational commitment in selected vocations (extract)

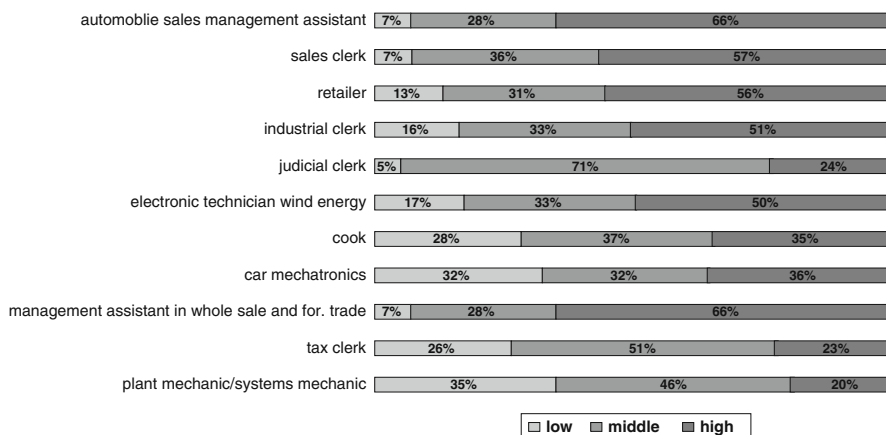


Fig. 12.5 Characteristics of working morale in selected vocations (extract)

which is conducive to learning and where apprentices are well integrated into the work processes, is a key factor for the development of both organisational and occupational commitment.

### *The Correlation Between Vocational Identity and Commitment*

It has also been analysed whether occupational identity relates more to vocational commitment or organisational commitment. Both types of correlation exist. The type of apprentices whose commitment is rather vocationally determined is coexisting along with the type of apprentice who is more organisationally motivated.

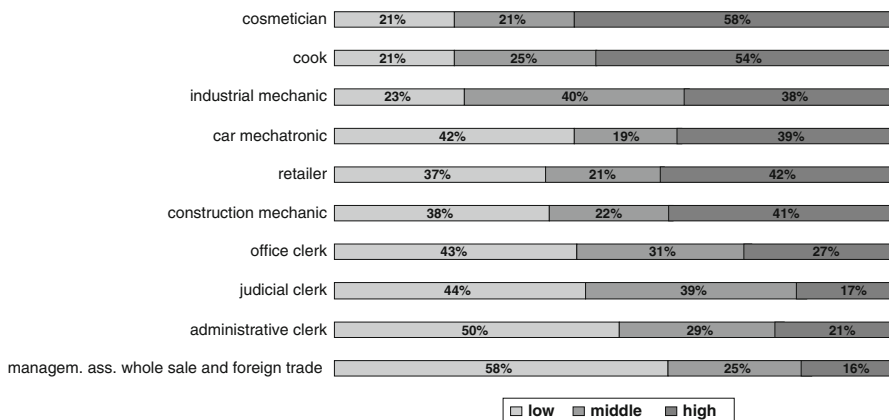


Fig. 12.6 Characteristics of vocational identity in selected vocations (extract)

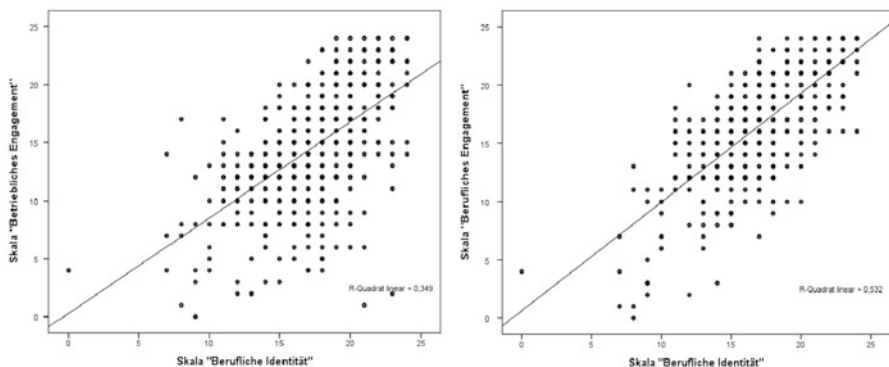


Fig. 12.7 Correlations between organisational commitment and vocational identity (left) and occupational commitment and vocational identity (right)

Occupational commitment is more relevant for commercial and technical professions whereas organisational commitment prevails in the domains of commercial vocations.

In general, the correlation between vocational identity and vocational commitment is higher than the correlation between organisational commitment and vocational identity (Fig. 12.7).

Vocational identity in a sense of anticipation of a role as a skilled worker thus builds more upon a motivation that relates to the identification with the profession learned. Nevertheless, there are close links between occupational and organisational commitment (Heinemann, Rauner and Maurer 2009), and it is likely that an apprentice who is highly motivated in a profession is also happy with the direct work environment in the training company.

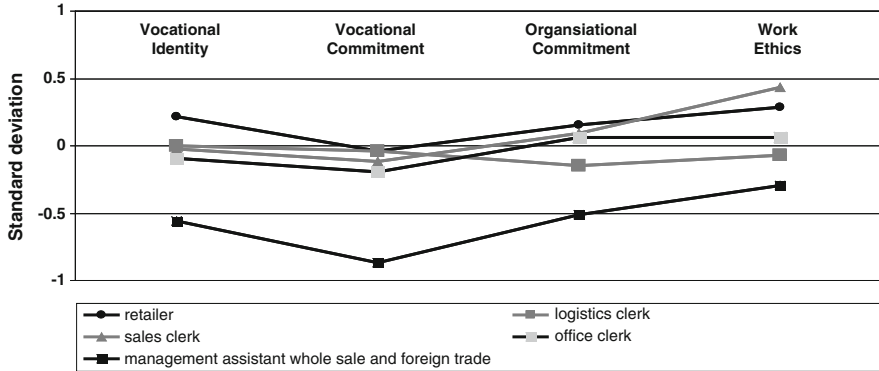


Fig. 12.8 Relatively low IC profiles in traditional commercial vocations

### IC Profiles

In order to generate a complete picture of the apprentice’s orientation or source of motivation in a specific vocation, all data gathered from the analysis of the four different scales have been summarised per profession in a so-called IC profile (identity/commitment profile). These IC profiles illustrate how learners in different professions identify with their vocations, training companies and what degree of working morale is given.

On the vertical axis, the value 0 is representing the average value of the corresponding scale. Any value above thus means a stronger, any value below stands for a lower level than average in occupational or organisational commitment, working morale or vocational identity, respectively.

Certain professions like the traditional commercial vocations only reach low values in almost all scales (Fig. 12.8); other professions show strong sources of commitment related to the occupation, rather than to the organisation (Fig. 12.9).

On the other hand, there are professions where apprentices seem to ‘like’ or to relate themselves more towards the organisation than towards the occupation in which they are trained. This strongly applies to professions in public administration, tax and judicial clerks. But the study also proved that in some professions, all aspects of motivation can reach high scores (Fig. 12.10).

### Typology of Professions According to IC Profiles

It is possible to classify the different types of orientation of apprentices in those 23 professions which have been analysed more deeply according to their degree of commitment (organisational versus occupational commitment) and according to the strength of orientation. Four different types have been found:

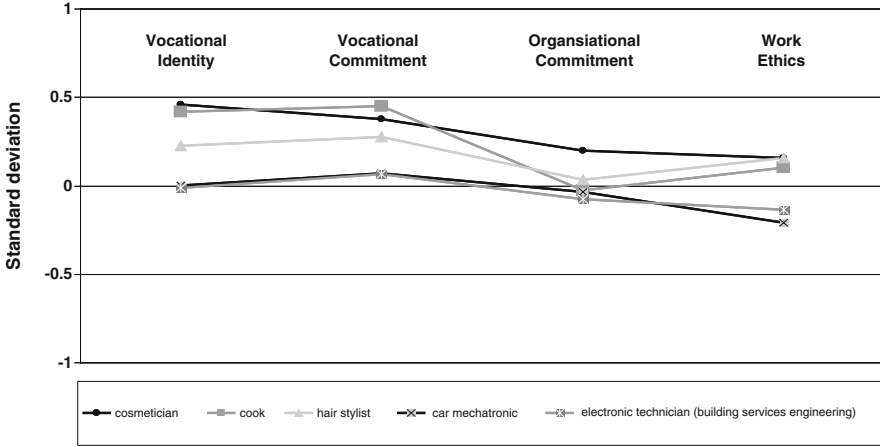


Fig. 12.9 IC profiles in vocations with stronger vocational but lower organisational commitment

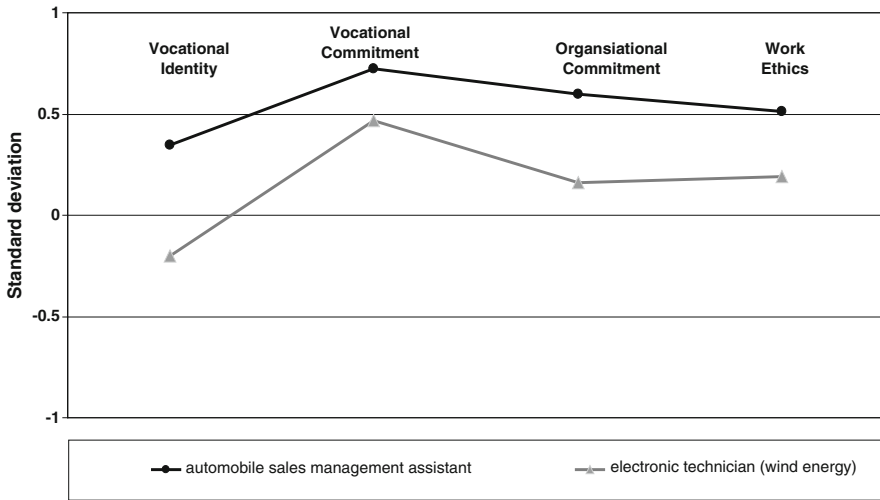


Fig. 12.10 IE profiles in attractive vocations

Group 1: Autonomous and Responsible Professionals

This type of apprentices is found in professions like ‘cook’, ‘electronic technician (wind energy)’ and – to a lesser extent – also ‘car mechatronics’ and ‘metal workers’. Their source of motivation is strongly based on their identification with their occupation. It is mostly professional ethics that count for their willingness to deliver quality and to perform well. Herein, the commitment towards the apprenticing company and the willingness to strictly act according to given work orders are playing a subdominant role. The type of the autonomous and responsible professionals is very much interested in carrying out vocational tasks independently and based on self-reliance.

### Group 2: Consistently Highly Committed Workers

According to this study, apprentices in ‘industrial mechanics’ or ‘automobile sales management assistants’ have reached high levels in vocational identity and correspondingly also high levels in occupational commitment. But contrary to those apprentices listed at type 1, these learners were as well showing a strong willingness to act according to strict work orders and compliance with company regulations and hierarchies.

### Group 3: The ‘Unremarkable’

The group of ‘unremarkable’ IC profiles was basically found in traditional merchant professions like ‘retailer’, ‘office clerk’ and ‘logistics clerk’ but also ‘construction mechanic’ and ‘warehouse clerk’. Apprentices in these vocations had reached similar shapes in their IC profiles like the apprentices in group 2 but on much lower levels. It is supposed that learning methods, especially within the apprenticing companies, can have a positive impact on the development of vocational identity and occupational and organisational commitment of these learners.

### Group 4: ‘Pragmatic Workers’

Pragmatic workers in this classification were all those apprentices who showed a low degree in vocational identity but nevertheless a good willingness to work and to follow instructions. Very much contrary to apprentices in group 1, these apprentices are more committed towards their organisation (sometimes in public administration) but not so much towards the profession they are learning. This applies apprentices like ‘administrative clerks’, ‘judicial clerks’ and ‘assistants in wholesale and foreign trade’. Apprenticeship in these professions falls behind essential aims of modern TVET, since in these vocations, it is very likely that the apprentices do not reach a commitment which would be necessary in order to take over responsibilities later on. Even though these vocations may not have similar identification potentials like some other preferred vocations, this study suggests that it would be necessary to work on measures to raise the attractiveness of these vocations.

## ***Vocational Identity and Commitment Within Its Context***

Above all, it is important to note that this study did not find any correlations between the development of vocational identity, occupational and organisational commitment and the social or migration background of apprentices. Whereas PISA studies suggest a correspondence between success in education and a learner’s social background (OECD 2007), such linkage could not be found in the context of vocational education and training in the Bremerhaven study. For the development of vocational identity, it was not important which school leaving certificate an apprentice had received, which language was spoken in his or her family or whether the neighbourhood was rather rich or poor. All these variables did not lead to any correlations.

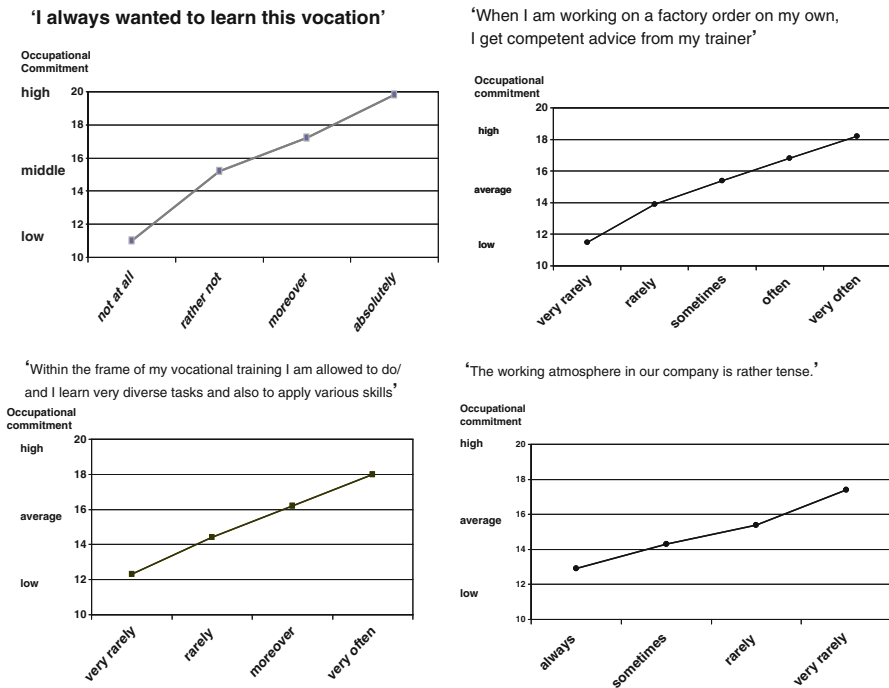


Fig. 12.11 Factors determining occupational commitment

What seems to play a crucial role in the development of occupational commitment are factors like the choice of the profession (being trained in a favourite profession) as well as concrete aspects related to the working atmosphere and training conditions (Fig. 12.11), which have to be discussed in more detail.

Motivation is very much related to the way the actual learning and working in the workplace is shaped or organised. The aspect of work and business process orientation has a cardinal function with regard to the development of professional competence, commitment and professional identity.

A high diversity of work tasks, i.e. skills to be obtained by the apprentices and the embedment of these work tasks into the work process, are a significant requirement for an attractive apprenticeship. Occupational as well as organisational commitment can be enhanced by a good quality of work tasks and as well if trainers are competent and employees treat apprentices like team colleges. This study has also come to the conclusion that it is better to slightly overcharge apprentices in order to provide a certain challenge.

The aspect of work and business process orientation has a cardinal function with regard to the development of professional competence, commitment and

professional identity. The fulfilment of work assignments in the company has a positive effect on commitment and professional identity when the trainees are given the opportunity to apply their knowledge and skills in complex and meaningful tasks and when the relevance of these tasks is visible in their own working environment. Since the context of work and an orientation towards business processes support a thorough understanding of the occupation and a highly developed professional identity and commitment, accordingly, this should be taken into consideration as a criterion for curriculum development and for the organisation of vocational education and training programmes.

## References

- Blankertz, H. (1983). Sekundarstufen II – Didaktik und Identitätsbildung im Jugendalter. In: D. Benner, H. Heid, & H. Thiersch (Hrsg.), *Beiträge zum 8. Kongress der Deutschen Gesellschaft für Erziehungswissenschaft*. ZfPäd, Beiheft 18: 139.
- Blau, G. J. (1988). Further exploring the meaning and measurement of career commitment. *Journal of Vocational Behaviour*, 32, 284–297.
- Blau, G. J., Paul, A., & St. John, N. (1993). On developing a general index of work commitment. *Journal of Vocational Behaviour*, 42, 298–309.
- Carson, K. D., & Bedeian, A. G. (1994). Career Commitment: Construction of a Measure and Examination of its Psychometric Properties. *Journal of Vocational Behavior*, 44, 237–262.
- Cohen, A. (2007). *Dynamics between occupational and organizational commitment in the context of flexible labour market: A review of the literature and suggestions for a future research agenda*. Bremen: ITB.
- Heinemann, L., & Rauner, F. (2008). *Identität und Engagement: Konstruktion eines Instruments zur Beschreibung der Entwicklung beruflichen Engagements und beruflicher Identität*. A+B Forschungsberichte. <http://www.ibb.uni-bremen.de/A-B-Forschungsberichte.268.0.html>. May 2, 2009.
- Heinemann, L., Rauner, F., & Maurer, A. (2009). *Engagement und Ausbildungsorganisation. Einstellung Bremerhavener Auszubildender zu ihrem Beruf und ihrer Ausbildung*. Eine Studie im Auftrag der Industrie- und Handelskammer Bremerhaven. [http://www.ibb.uni-bremen.de/fileadmin/user/A\\_B\\_Forschungsberichte/IE\\_Studie\\_Bhv\\_240609.pdf](http://www.ibb.uni-bremen.de/fileadmin/user/A_B_Forschungsberichte/IE_Studie_Bhv_240609.pdf). August 1, 2009.
- Jäger, C. (1988). Die kulturelle Einbettung des Europäischen Marktes. In: M. Haller, H. -J. Hoffmann-Novotny, & W. Zapf (Hrsg.), *Kultur und Gesellschaft* (pp. 556–574). Frankfurt/Main: Campus Verlag.
- Meyer, P. J., & Allen, N. J. (1991). A three-component conceptualization of organizational commitment. *Human Resource Management Review*, 1, 61–89.
- Meyer, P. J., Allen, J. N., & Smith, C. A. (1993). Commitment to organizations and occupations: Extension and test of a three-component conceptualization. *Journal of Applied Psychology*, 78, 538–551.
- Niemi, R. G., Carmines, E. G., & McIver, J. P. (2004). The impact of scale length on reliability and validity. *Quality and Quantity*, 20 (4): 371–376.
- OECD. (2007). *PISA 2006*. Paris: OECD.
- Piening, D., & Rauner, F. (Hg.). (2008). *Innovative Berufsbildung – Auf die Attraktivität für Jugendliche und Unternehmen kommt es an!* (Reihe: Bildung und Arbeitswelt, Bd. 19). Berlin: LIT Verlag.
- Rauner, F., Haasler, B., Grollmann, P., & Heinemann, L. (2008). *KOMET Messen beruflicher Kompetenzen. Grundlagen und Konzeption des KOMET-Projektes*. Münster: LIT Verlag.

- Rauner, F., et al. (2009). *Messen beruflicher Kompetenzen. Band II. Ergebnisse KOMET 2008* (Reihe Bildung und Arbeitswelt). Münster: LIT.
- Rauner, F., et al. (2011). *Messen beruflicher Kompetenzen. Band III. Drei Jahre KOMET Testerfahrung* (Reihe Bildung und Arbeitswelt). Münster: LIT.
- Weber, M. (1922). *Gesammelte Aufsätze zur Religionssoziologie I*. Tübingen: UTB. 5. Auflage 1982.

# Chapter 13

## Innovative Models of More Interactive Cooperation of VET Schools and Enterprise in China

Zhiquan Zhao, Zishi Luo, and Donglian Gu

### Introduction

During the progression of global economy, the manufacturing industry has become the leading industry of the Chinese economy, taking up to 40% of the nation's GDP (Leading Group Office of the First National Economic Census 2005). However, it has always been hindered by the lack of qualified skilled workers, among other issues.

The training of skilled workers in China mainly relies on vocational education offered by vocational schools and colleges. Due to the gap between the education process of vocational schools/colleges and the practice of enterprises, the training quality of skilled workers fails to fully meet the needs of the economic development. This is mainly reflected in the following areas:

- There is a lack of a mechanism in supporting and regulating school–enterprise cooperation. Laws, regulations and operation mechanisms have not yet been set up to promote and standardise the cooperation between vocational schools and enterprises. Research shows that many employers cannot afford the time or efforts to make systematic plans to develop their human resources. While complaining a lot about low quality of the skilled workers, employers are

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reluctant to invest in the training of technical personnel (Research Group of Vocational Education of the Manufacturing Industry 2008).

- There is a lack of specification in curriculum development in vocational schools. At present, the supervision departments of vocational education – the Ministry of Education (MoE) and Ministry of Human Resources and Social Security (MoHRSS) and their subordinate vocational schools – undertake almost all the work of vocational education, which includes training programme setting, curriculum development, implementation and assessment. As there is an absence of the industries, the actual needs of the enterprises are not reflected well enough and thus not incorporated in to the vocational education. Consequently, the vocational competence of vocational school graduates is yet to meet the expectation of the growing businesses (Chen et al. 2009).

In order to solve the problems mentioned above, various ways of ‘cooperation between school and enterprise’ (*xiao qi he zuo*) and ‘integrating learning and work’ (*gong xue jie he*) have been explored to improve the quality of vocational education. Many vocational education institutes have made positive contribution to explore the school–enterprise cooperation and integrating learning and work in the past years. However, lack of systematic theoretical guidance and lack of successful model as best practices have resulted in less satisfactory outcomes. Overall speaking, three difficulties stand out in the practice:

- It is a rather complicated process to establish the school–enterprise cooperation mechanism, as it touches upon a range of different fields, including education, economy, society, culture, finance and tax, and involves all the related government administrative authorities. At the moment, there are no relevant regulations and systems in place to provide security and support for the mechanism.
- Enterprises’ interests in the idea and participation in the mechanism are low. Even though some enterprises are willing to take interns from vocational schools, under the pressure of organising production and fulfilling contracts, they offer only mainly apprentice opportunities of simple operational jobs on assembly lines for the students. Such jobs, however, often fall short of learning values for students.
- In response to the lack of practical experience of real-life working environment, both central and local governments have increased the investment on facilities for training and experimenting activities in vocational schools in the past years. However, these intern activities have been restricted to premises of the vocational institutes and are far from the real-life working environment that the enterprises would desire (Luo 2008).

This has consequently posed an important question regarding vocational education: how can we improve the vocational education administration through tackling the challenges of cross-department and of policy in the process of school–enterprise cooperation, in order to development the laws, regulations and system which ensure

and support the successful cooperation? In addition, on the level of curriculum and delivery, efforts should be made to research on developing and delivering courses that integrate working and learning so as to provide guidance to institutes on learning methodologies.

## Research Problem

### *Overview of Personal Development and VET System in China*

In the globalised economy, China has established its competitive edge in the labour-intensive manufacturing industry with its huge market demand, low production cost, relatively solid industry foundation and productivity, and the main contributor to this success is the low cost of labour (Li and Du 2004). China's future leap in economy demands a large number of good qualified workers. However, there is an obvious gap in terms of quantity and quality of the skilled workers in China.

First of all, the setting of skill levels is absurd, and the quality of skilled workers is low. At the moment, China has a number of 2.45 million highly skilled workers (*gao ji gong*), accounting for 3.5% of all skilled workers, and over one million technicians (*ji shi*), 1.4% of the total. Even for the tiny number of technicians, they tend to be inadequately educated and over-aged (average age of technicians is 52). In addition, it is not uncommon that on the one hand technicians with degrees are reluctant to work in the front line and on the other those who do work in the front line do not have the required competency and experience (Chang 2004).

Secondly, as the product quality and productivity improve, enterprises need skilled workers with even higher skills. Research findings indicate that majority of enterprises do not necessarily pursue labour force with higher degrees. Rather, work experience is what they value more, and they ask for the professional skills for the corresponding posts as well as 'key competencies' such as job commitment and professionalism, collaborative skills, learning skills and international vision. The contrast lies in that the current skilled workers cannot meet the requirement of the enterprises, especially in the area of 'key competencies', such as the ability to integrate information and automation technology in the modern manufacturing organisations (Research Group of Vocational Education of the Manufacturing Industry 2008).

An important contributor to the difficulties mentioned above is that skilled workers do not have a favourable social and economic status overall. This is associated with the level of the Chinese enterprise developments and the way they operate, as well as with the Chinese society's tradition and culture.

In a unique developing country like China, there is a big gap among enterprises in development, with very competitive modern enterprises but also backward

enterprises technology- and management-wise. However, all enterprises face great challenges for future development, some of them being:

- Incompetent in technological innovation and dependent on international manufacturing technologies, especially the key technologies
- Poorly structured product lines – short of highly technological products and high-value-added products while overproduction of low-skilled and low-technological products
- Inadequate human resources

The first two factors have much more direct and visible impacts on the development of enterprises, resulting a lot of managers fail to carry out more in-depth analysis, either because of no time or no ability to. Instead, they resort to complaining about short of human resources and low quality of staff. Some enterprises even regard vocational education as the government's job and thus are not interested in the involvement of vocational education, nor in cooperation with the vocational institutions, let alone taking up vocational education responsibilities, such as engaging in the training process, providing internship opportunities to part-time trainers and improving training facilities (Research Group of Vocational Education of the Manufacturing Industry 2008).

In addition, the Chinese traditional culture believes 'He who rules lives by mental perplexity He who is ruled lives by physical labour', as quoted by the ancient philosopher Meng Tze. Therefore, enterprises value development of human resources but only focusing on management and technical R&D departments. They overlook the training and development of the skilled workers in the front line, so there is no culture in the enterprises to give full play of the skilled workers' potential or to encourage their initiatives. According to a survey, majority of enterprises manage to implement training as stipulated by law for holders of special jobs who are required to have certain qualifications, but they rarely consider the training needs of other skilled workers, especially those related to professional development. Many enterprises, mid- and small-sized ones in particular, only set eyes on short-term needs and fail to have long-term plans. Even in large enterprises, investment on trainings for skilled workers ranks among the lowest of investment for all other staff. Unfavourable package and uncertain future development combined, many enterprises suffer from huge turnover of skilled workers, particularly the private enterprises, in which the turnover rate can reach as high as 25%. What is more, it is common that technicians retire early, some craftsmanship is lost and no continuity for the skills. All these lead to deterioration for enterprises that are already short of highly skilled workers (Lv 2006).

Considering the huge regional difference of economic and social developments, China is trying to establish a vocational education system that guarantees a simultaneous and interconnecting development of school education and short-term training. The term vocational education (*zhi ye jiao yu*) has the same meaning as the term 'technical and vocational education and training' (TVET) which is used by UNESCO. Currently, school education in secondary and tertiary level is the backbone of Chinese vocational education system and consists of three levels:

**Table 13.1** Vocational schools and colleges 2010 (MoE 2012)

Type of school	Schools	Students in 1,000
Secondary specialised schools	5,658	10,901.1
Vocational senior high schools	5,206	7,263.3
Vocational and technical colleges	1,246	12,771.7
Skilled worker schools and technician institutes	3,077	4,153.2
Total	15,187	35,089.3

- Elementary vocational education, which now only exists in the underdeveloped rural areas. Its aims are to produce junior-level skilled workers and farmers.
- Secondary vocational education, referring to those at senior high school level, including secondary specialised schools (*zhong deng zhuan ye xue xiao*), vocational senior high schools (*zhi ye gao zhong*) and skilled worker schools (*ji gong xue xiao*). The coexistence of the three kinds of schools is the intersecting of the competence among the MoE and MoHRSS. There is very little difference among them in terms of organisation and contents of the training programme in fact.
- Higher vocational education, operated as vocational and technical college (*zhi ye ji shu xue yuan*) and technician institute (*ji shi xue yuan*), which enrolls graduates from regular senior high schools and secondary vocational schools. The courses typically require 3 years of learning. Its aim is to train high-level skilled workers and technicians (Table 13.1).

All the vocational institutions listed in the table only differ in names, level of education and length of courses. They are all the same in that they operate under the same principle, that is, ‘to develop the students’ professional ethics, vocational skills and employability’ in order to ‘meet the needs of the economy on high quality labour force and skilled talents’ by ‘adopting the model of “integrating learning and work” (*gong xue jie he*), “cooperation between school and enterprise” (*xiao qi he zuo*) and “on-job internship” (*ding gang shi xi*)’ (MoE 2010). The challenges this chapter discusses are across the board for all these three levels of schools and institutes (MoE 2010).

### ***The School–Enterprise Cooperation Education Model***

In China, it is popular to use ‘school–enterprise cooperation’ (*xiao qi he zuo*) and ‘integrating working and learning’ (*gong xue jie he*) as models to cultivate talents. The development of this model has gone through three major stages:

- The Westernisation movement in the later half of the nineteenth century speeds up the industrialisation in China and witnesses the birth of the earliest school–enterprise cooperation mechanism. At that time, intern factories were set up to study the advanced technology from the West, and this practice was later developed into the early work-as-you-study model in a vocational education sense.

The establishment of China Vocational Education Association advocated and further promoted the idea of ‘part work, part study’, integrating education and production. This in fact was primarily aimed for the purpose of enlightenment and promotion of literacy, focusing on work but also including study (Di 2007).

- In the 1950s, when the People’s Republic China was just founded, the education system could not meet the development of the economy. On the one hand, graduates of secondary and primary school students lacked practical skills and thus could not obtain what they wanted, work-wise and life-wise; on the other hand, offspring of workers and farmers could not afford education due to economy strain. In this context, the then President Liu Shaoqi started advocating and implementing ‘the part work, part study education alongside with the full-time in-school education’. This system would have worked well to suit China’s situation then, but it was completely destroyed as the Cultural Revolution swept China between 1966 and 1976 (Chen 2004).
- Following the introduction of the ‘open and reform’ policy in 1980s, the development of vocational education was back on track, and the ‘school–enterprise cooperation’ idea received more and more attention. In 2005, the State Council of China states clearly in *Decision of the State Council on Vigorously Developing the Vocational Education* (*guo fa* [2005] No.35) that ‘the model of integrating working and learning as well as integrating schools and enterprises should be heavily promoted’. So far, ‘integrating working and learning’ and ‘integrating schools and enterprises’ have become the two of the top terms in the discussion of vocational education. In 2006, the MoE published a paper titled *Views on Improving the Education and Teaching Quality of Higher Vocational Education* (*jiao gao* [2006] No.16). The paper argues that work-integrated learning should be regarded as an entry point of the reform on training talents in the higher vocational education. In the same year, another document, *Views on Pushing up Senior Skilled Worker Schools and Technician Institutes and Accelerating the Speed of Cultivating Highly-Skilled Personnel* (*zhong ban fa* [2006] No. 15), was issued by the central committee of the Chinese Communist Party and the State Council, demanding the establishment of a new training system to cultivate highly skilled personnel through cooperation between schools and enterprises. This triggered a nationwide interest in exploring how to train personnel through cooper and work-integrated learning.

At the moment, the Chinese government is developing a *National Guideline for Middle- and Long-term Education Reform and Development*, which not only signals the kickoff of the all-round education reform in China but sets tones for the Chinese education reform and development in the next 10 years. From the *Draft for Comments of the Guideline* (MoE 2010), Chinese government is determined to include school–enterprise cooperation in the list of the main reform trials within the national vocational education system, requiring vocational education development models that are built on education development strategy, models that reflect both Chinese characteristics and advanced international vocational education approaches and models that suit local needs.

Despite the absence of a clear definition of the terms, it is generally accepted that school–enterprise cooperation can be carried out in the following ways:

1. *School-Run Enterprise (xiao ban qi ye)*

As the name suggests, the enterprise is run by the school and run on the premises of the school. Students need to accomplish production tasks that involve education here, and the school thus achieves the combination of theoretical education and practical teaching. There are three types of most common school-run enterprises:

- Enterprise entities or manufacturing companies with teaching tasks, built on one or one group of key courses offered by the school
- Manufacturing factories with teaching tasks, run on the premises of the school with collaboration of both school and enterprise (enterprises contributing on facilities, skilled expertise and contract bidding in the market; school contributing on venue, relevant equipment and utility costs and students fulfil the production tasks to the clients' requirement under the guidance from their teacher)
- Joint-stock enterprise set up by school and enterprise either on campus or off campus, with production tasks on the one hand and providing students with practical learning opportunity on the other, participating the teaching as well as enjoying the economic benefits of the teaching (in China, the vocational education does not fall in the category of compulsory education, so students are obliged to pay for the tuition fee, except for those in the underdeveloped areas where central government supplies subsidy)

The common feature of the three models lies in the integration of theoretical learning and practical training in the vocational education in such school-run enterprises.

2. *Talent Development by Request (ding dan shi pei yang)*

Based on the enterprises' needs for skilled talents, schools and enterprises jointly work out talent development plan and sign preliminary agreement on taking up graduates from the schools by the enterprises. Both parties collaborate in the fields of teaching delivery, teachers, technology and teaching resources, and students join the workforce of the enterprises upon graduation. Through this 'talent development by request' model, schools and enterprises come up with the development plan and deliver it together, in which schools maximise the teaching resources from the enterprises and the enterprises obtain the staff to their requirement through fulfilling of the contracts.

3. *Learning Alternated with Working (gong xue jiao ti)*

This is a learning model in which learning and working occur in turns. The school year is consisted of the term of learning and the term of working. During the latter, students take up posts in the enterprises' production and will be paid allowance by the enterprises (Huang 2009).

The three models mentioned above are the ideal models for school and enterprise collaborations. In reality, however, there are numerous challenges in delivering these

models, the most challenging one being the lack of interests of the enterprises and the low involvement of the enterprises. In addition, there are obstacles during the internship. For example, on the one hand, vocational institutes do not usually provide the enterprises with a systematic teaching plan and management standards for the internship, neither do they manage nor monitor the ‘working’ element of the internship from an educational approach. On the other hand, enterprises tend to prioritise the economic benefits of their own and use the students as low-skilled labour, and thus, the internship has failed to cultivate skilled talents through education. Other problems occurred from the school–enterprise cooperation include the big gap between the vocational education curriculum and content and the actual needs of the enterprises, failure to meet the needs of enterprises’ practical training due to absence of the school’s teaching resources, under-skilled teachers who fail to meet the demands of practical training and teaching and failure of the school’s administration system to meet the needs of the cooperation (Dai 2009).

### *Courses Under the School–Enterprise Cooperation*

In the traditional Chinese vocational education, curricula are set up based on two areas: knowledge and skill. In practice, independent systems exist in both theoretical teaching and practical training. There is no coordination between the two, and no direct relation between learning and practice is established. Students encounter numerous difficulties in learning without the context of working (Zhong 2001).

Given these problems, China’s vocational education has been making attempts to promote the integration of theoretical learning and practical learning by introducing foreign experience since the 1980s. With the implementation of international development programmes, a series of reference models (e.g. competency-based education (CBE), Developing a Curriculum (DACUM), Germany’s work-/practice-based learning and Modular Employable Skills (MES)) have been introduced, of which CBE has the biggest influence (Xu 2004; Liao and Tian 2003).

At this stage, the curriculum reforms of most vocational schools/colleges are more or less based on the methodology of CBE/DACUM. It can be said that such concepts have brought tremendous changes to the traditional curricula during the reforms in the TVET system to better serve the economic developments in the country. Both the long-standing Confucian traditions that ‘knowledge accumulation’ is superior to ‘practical experience’ and the relation between theory and practice have been radically changed. In the meantime, the principle that ‘practice is more important than theory’ has been established (Zhao 2009).

However, due to the educational requirements, cognitive development and skills training should be treated as a whole during the learning process in vocational education. To realise the holistic action process, it is essential to conduct holistic curriculum design. In recent years, a lot of researches and practices have been carried out in this regard in China’s vocational educational system. Representative results include project learning, task-based learning, learning field (Lernfeld) from

Germany and so on. Project teaching refers to teaching activities for the implementation of a complete 'project' by teachers and students. In China, it is regarded as both a teaching approach and a curriculum model. Project teaching provides students with the opportunity to personally experience in the work processes. Students can get an understanding of and experience from their work, through which they may acquire comprehensive vocational competencies including key competencies (not only skills) to realise all-round developments (Jiang 2002, 2003).

Nonetheless, various difficulties exist in the wide popularisation of project teaching in China. The defects of effective methods, the shortage of learning resources and the scarcity of the experience of teachers and students are the major problems in the implementation and popularisation of project teaching, which can be demonstrated in the following aspects:

- The value and the significance of knowledge in work processes are rarely recognised.
- Resources are rather insufficient for a vocational school/college to independently develop the teaching project.
- The requirements of integrated curricula (i.e. the integration of theory and practice) are far too demanding for teachers.
- Integrated curricula disrupt traditional school educational management systems (e.g. class system, the mechanism of independent organisation of theory teaching and practice teaching) and pose a challenge to the current teaching management.
- Most of the practical teaching bases in vocational schools/colleges are designed in line with specific disciplines instead of the requirements of vocational activities of specific working areas.

Based on these observations, we have been looking for the 'best practice' in vocational schools/colleges throughout the country to identify both theoretical evidence and solutions to the problems (Zhao 2009).

## Methodology

In order to ensure the depth of the research and the validity of the data, the research exercise combines on-site inspection and analysis of case studies, with the addition of interviews with heads of schools and teachers during the on-site inspection, getting direct feedback from the school administrators and teachers of the field for true-to-life information and details.

Vocational education is developing fast in the Pearl River Delta region, where economy and the manufacturing industry are prospering. We chose the city of Guangzhou as our target city. Based on our secondary research on various documents and the recommendation of local authorities, we chose Guangzhou Technician Institute (GTI) as the target institute. We found positive evidence and solutions to the problems mentioned above on the basis of analysing papers on teaching and teaching process, written by teachers, as well as interviews with teachers

and students. In the past dozen years, GTI has been innovative in applying new teaching approaches, for example, the teaching models and developing professional expertise, making GTI a representative demo among technician colleges.

## **Research Findings**

### *Case Description*

#### **Case One: School–Enterprise Cooperation Established with the Supplier Through Equipment Purchase**

In 2006, with the support of Guangzhou government, GTI initiated a numerical control (NC) technology upgrading project of common milling and turning machines. The bid winner was a large modernised enterprise named Guangzhou NC Equipment Co., Ltd. According to the bid, the enterprise was to supply an NC system and parts for equipment upgrading to the school, to send technicians to instruct teachers and students, to support equipment installation and start-up and to be responsible for acceptance inspection and after-sale service. GTI should supply 26 common turning and milling machines, provide the venue for upgrading and send teachers and students from relevant departments to participate in the upgrading process.

Firstly, the teachers were sent for training in the development and production departments of the enterprise for 1 month. Secondly, with the guidance of the enterprise, a proper venue was identified in the school in accordance with the enterprise's standards for facility upgrading. Within 3 months after that, the team completed the transformation of NC machines. A referential curriculum and the teaching materials were also written up. The cooperation of the school teachers and the technicians of the enterprise led to the production of an NC-transformed machine and an NC milling machine in 2006, with 57 more manufactured in 2007 and 2008. In 2009, the school built five precision NC instruments and a five-axis centralised instrument. The hundreds of students involved in this programme experienced at the beginning the technical upgrading of common milling and turning machine, the production of precision NC turning machine and finally the instalment and adjustment of five-axis machining centre with advanced technology. They achieved the targets set by enterprises in machine operation and maintenance. In the meantime, teachers were granted a patent during the process of development and research of the new products.

Comment: The school chose a good enterprise to cooperate with by means of bidding and successfully set up a contract with the enterprise by purchasing teaching equipments. On the one hand, with the main body of the production still being the enterprise, the enterprise provided equipments, parts and technical supports that are in accordance with industrial standards and transferred the production site to the

campus. On the other hand, with the school being the organiser of the production, the production process was imbedded into the teaching process. By doing this, the teachers and students gained work process knowledge and accumulated work experience. From an economic point of view, GTI made the best use of government capital on teaching equipments, and the actual purchase cost dropped by 25% due to their participation in the production process of the equipments. The enterprise not only obtained business orders, reduced input and gained economic benefits but also managed to have qualified employees-to-be and a platform for the research and development (R&D) of new technology during the process of giving support to the school teaching.

### **Case Two: School–Enterprise Cooperation Programme Based on Cooperation in R&D of New Products**

According to the teaching plan of GTI, there was a need for a number of intelligent and automatic control systems of medium and high performance. However, there was neither a mature product in the market nor enterprise able to develop and produce the systems independently. By sending an invitation of tender, GTI chose a small-scale but competent enterprise, Ludu Park Facilities Co. Ltd, as their partner. Teachers of the mechanical–electrical department and the technicians of the company worked together on designing and developing the LD/ SJ01A Open Information Intelligent Inspection and Monitoring System. Students took part in every step of the production process. In this programme, two patents were granted and have become an integrated part of the curriculum. Later, this system was promoted to the market as a matured product by the company.

Comment: The vocational school cooperated with a small enterprise by developing and conducting new product together. By taking part in every step of the project, students learned about the specialised skills and accomplished the production task to the technical standard of the enterprise. In the process of learning through working, students acquired comprehensive vocational competence and relevant work experience. Furthermore, by making the best out of their resources and the chance offered by the project, the school expanded their cooperation with the enterprise, won technical support from the enterprise and tapped their teachers' professional potential. As for the enterprise, by making use of the technology and human resources of the school, they not only developed a new product but also upgraded their innovation which then enhanced their own core competitiveness.

## **Summary**

School–enterprise cooperation carried out by GTI not only facilitated co-production of medium- and high-tech facilities and creation of teaching facilities and mechanism but also developed relevant courses. The cooperation transformed the trading

of hardware into integrated curriculum resources. This offers a shining example and positive evidence for achieving school–enterprise cooperation in the current context.

There were also positive outcomes from the perspective of enriching curriculum. For the students, they improved their adaptability to the authentic work environment by taking part in the actual operation. They gained a deeper understanding about the society and enterprise by working with adults, especially with technical personnel of the enterprise. They understood to some extent the environment where they were to work in and learned to solve problems at work by cooperating with people from different backgrounds. For the teachers, they developed their professional competence by taking part in the school–enterprise cooperation project. The school in return upgraded the teaching standard by enriching the curriculum.

It should be mentioned that there are limits of these kinds of cooperation concepts, for example, missing advantages on learning on teal customer demands and customers orders. In both cases, the school also has to invest a lot of time and money.

## Conclusion for VET Research and Practice

By introducing production projects or technical development projects that meet the curricular needs of vocational schools, the teaching process is directly transformed into a work process that is consistent with the technical flow. This also meets the production standards of the enterprise (Loebe and Severing 1995). The schools, as a manager of the programme, consequently build up the capacity of their resources.

Many small- and medium-sized enterprises are also in high demand of innovating their products by taking advantage of public resources. Schools with industry facilitation can be the right resources for them. The cooperation between both parties can achieve a win–win deal and serve as the foundation of a work-integrated curriculum through project-based teaching.

GTI made full use of such cooperation, allowing teachers and students to participate in the authentic production process, where they worked as real professionals while on campus. This example provides useful and positive experiences for vocational schools across China and for those in countries with a similar education system, but more research is needed in the future to reflect further on the kind of presented case models.

## References

- Chang, X. (2004). *Made in China: Employment, personnel and enterprise development*. Kunming: Yunnan People's Press.
- Chen, Y. (2004). The ideological trend of 'part work, part study' in vocational education. *Vocational Education Forum*, 11, 59.

- Chen, Y., Chen, L., & Zhao, Z. (2009). *Competence-oriented revitalization: Strategy and technique*. Beijing: Chinese Labour and Social Security Publishing House.
- Dai, Q. (2009). Research on teaching-learning system of vocational institutions in 'school-enterprise cooperation'. In Chinese Society of Vocational and Technical Education (Ed.), *Teaching-learning reform needs the guide of research*. Beijing: Yuwen Press.
- Di, J. (2007). History development and practice of integrating learning and work in VET in China. *Vocational Education Report*, 3, 26–28.
- Huang, Y. (Ed.). (2009). *Vocational pedagogy – Principle and praxis* (pp. 461–468). Beijing: Higher Education Press.
- Jiang, N. (2002). Research on the curriculum structures of 'Broad Basis and Flexible Module'. *Chinese Vocational and Technical Education*, 3, 50–51.
- Jiang, D. (2003). Concept of the TVET curriculum. *Chinese Vocational and Technical Education*, 31, 1.
- Leading Group Office of the First National Economic Census by the State Council. (2005, December 14). *The major statistic bulletin of China's first national economic census*. Beijing: Leading Group Office of the First National Economic Census by the State Council.
- Li, L., & Du, Z. (2004). *Research report of manufacturing industry development in China*. Beijing: Science Press.
- Liao, Z., & Tian, H. (2003). *New approach to curriculum theory* (p. 226). Educational Science Press: Beijing.
- Loebe, H., & Severing, E. (1995). *Bildungsplanung im Betrieb*. Nuerberg: bfz.
- Luo, Z. (2008). *New chapter of qualified VET*. Guangzhou: Guangdong Higher Education Press.
- Lv, Z. (2006). *International industry transfer and the development of manufacturing industry in China*. Beijing: Economy Management Press.
- MoE. (2010). *National guideline for middle- and long-term education reform and development* (Draft). <http://www.chinanews.com.cn/edu/news/2010/02-28/2142843.shtml>. Accessed 15 May 2010.
- MoE. (2012). *Statistic*. <http://www.moe.gov.cn/publicfiles/business/htmlfiles/moe/s6200/index.html>. Accessed 22 November 2012.
- Research Group of Vocational Education of the Manufacturing Industry. (2008). Cultivation of technical personnel in manufacturing Industry: Problems and suggestions. *Education Research*, 5, 66–71.
- Xu, G. (2004). Multiple factor analysis on the objective development of VET curricula. *Vocational Education Forum*, 8, 19–20.
- Zhao, Z. (2009). *Guide of integrated curriculum development in work-integrated learning of vocational education*. Beijing: Tsinghua University Press.
- Zhong, Q. (Ed.). (2001). *For the rejuvenation of the Chinese nation, for the all-round development of each student* (p. 172). Shanghai: East China Normal University Press.

# Chapter 14

## Developing Complex Performance Through Learning Trajectories and Re-creating Mediating Artefacts

Michael Eraut

### Epistemology and Terminology

Both knowledge and learning can be examined from two perspectives, the individual and the social. An individual perspective on knowledge and learning enables us to explore both differences in what and how people learn and differences in how they interpret what they learn. A social perspective draws attention to the social construction of knowledge and contexts for learning and to the wide range of cultural practices and products that provide resources for learning.

In universities, knowledge is primarily associated with publication in books and journals and subject to quality control by editors, peer review and debate. This *codified knowledge* is then given further status by incorporation into educational programmes, examinations and qualifications. The model of knowledge creation is that of an organised, socially constructed knowledge base, to which individual authors and groups of co-authors add new contributions. However, practical work in professional and vocational education also requires knowledge that cannot be fully described in books, and *cultural knowledge* that has not been codified plays a key role in most work-based practices and activities (Eraut 2000). What does appear to be generally acknowledged is that much *uncodified cultural knowledge* is acquired informally through *participation in working practices* and is often so ‘taken for granted’ that people are unaware of it. In addition to the cultural practices and discourses of different occupations, one also has to consider the cultural knowledge that permeates the beliefs and behaviours of their workers, suppliers and clients.

Both types of knowledge may be investigated for their range of meanings, and this is where the interaction of social and individual perspectives is particularly enlightening. The theory of *situated learning* postulates that the personal meaning of

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a concept, principle or value is significantly influenced by the situations in which it was encountered and the situations in which it was used. Hence, the personal meaning of a concept or theory is shaped by the series of contexts in which it has been used. Given today's rapid mobility, the sequence of such contexts is probably unique to each individual practitioner, and this may lead to them acquiring slightly or widely different meanings. Even codified knowledge is personalised to some extent.

I chose the terms *personal knowledge* and *capability* for the individual-centred counterpart to cultural knowledge and defined it as 'what individual persons bring to situations that enables them to think, interact and perform' (Eraut 1997, 1998). This enabled me to investigate the effects of personal knowledge without necessarily having to represent that knowledge in codified form. The rationale for this definition is that its defining feature is the *use* of the knowledge, not its *truth*. Its ingredients are usually a mixture of:

- Published knowledge ready for use
- Knowledge acquired through acculturation
- Knowledge constructed from experience, social interaction and reflection
- Skills developed through practice with feedback
- Episodes, impressions and images that provide the foundations for informal knowledge
- Self-knowledge, attitudes, values and emotions

The evidence of personal knowledge comes mainly from observations of performance, and this implies a *holistic* rather than *fragmented* approach because, unless one stops to deliberate, the knowledge one uses is already available in an *integrated form* and ready for action. The *context* for an individual could include people, events and practices at the level of working groups, departments or the whole organisations, but their relative significance could vary greatly both within and across organisations. In general, the most significant aspects of the context for an individual will be determined by those with whom they have the most working contact and those who have power over them. The context in which the individual is working and learning influences how their capabilities are perceived, how they perform and how they learn. This dynamic relationship with their work context is often missing from competence-based assessment, and issues related to team and organisational levels get little or no attention. If we want learners to develop a social identity and contribute to society, we have to demand more than the acquisition of knowledge and achievement of individual tasks and assignments. We also want to know about how they have used their competencies in group contexts and how they tune their work to fit the specific needs of their customers, clients or colleagues.

### ***Competence and Capability***

According to the context, one's competence may be construed as being properly qualified, able to perform on your own, capable or adequate but not expert. Hence, I define competence as '*being able to perform the tasks and roles required to the*

*expected standard*'. This expectation, being socially defined, may be taken for granted, decided by a chosen group or determined by the micro-politics of the context. Hence, the definition of competence is likely to vary across contexts and over time. Competence can also be a moving target because the expected standard often varies with the experience, responsibility and reputation of those concerned.

Ideally, a practitioner's competence is enhanced and expanded by further practice and new challenges. But this will depend on the affordances offered by their practice context and the disposition of individuals or groups to take advantage of them. At any one time, their competence is limited to the domain, within which their practice meets the expectations of significant others or clients. Key aspects of this domain include:

- The contexts in which the performer will have to operate, including teamwork (Salas et al. 1992; Hackman 1987) and difficult locations
- The conditions under which the performer will have to work, e.g. degree of supervision, pressure of time, crowdedness, conflicting priorities and availability of resources
- The situations which the performer may encounter, covering such factors as client types and demands, tasks to be tackled, interpersonal events and emergencies

This complexity is incompatible with the common but simplistic assumption that competencies can be treated as binary variables, i.e. that workers are either competent or incompetent in each aspect of their performance. Bolden and Gosling (2004) argue that competencies cannot possibly cover all the things you need to perform well in a job, and they tend to treat job performance as more fragmented and less holistic than it really is.

Moreover, there are other reasons why competence may not always be translated into performance:

- Personal disposition, which may be affected by both contextual norms and personal confidence in that particular context
- Lack of capacity due to too heavy a workload or lack of time (a common feature of many examinations)
- The context and conditions in which the performance is situated (these may be too crowded, lack important facilities or fail to provide appropriate support)

Over time, these factors can cause a person to settle for lower standards of performance.

Eraut's research into government-based competency-based qualifications in UK workplaces (Eraut et al. 1996<sup>1</sup>; Eraut et al. 2001<sup>2</sup>) also indicated real difficulties in articulating and representing the nature of competence. These include:

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<sup>1</sup>This was mainly used by unemployed school leavers and unskilled workers who lost their jobs.

<sup>2</sup>This was mainly used by mid-career employees backed by their employers.

- Finding the most appropriate level of detail: very broad representations of competence are too vague for any practical use, and very specific representations tend to become too numerous to handle, as lists of competencies approach the size of telephone directories.
- Recognising the changing, conditional and contextual nature of what counts as competence. The half-life of such a consensus is usually short because assessors change according to the expectations of significant others.
- Those who assess competence frequently differ in their judgements, and Weick (1983) argues that reasoning and acting are interleaved rather than aggregated.
- Covering all parts of a job is rare because many aspects remain tacit, and ill-defined terms like ‘experience’ or ‘personality’ tell us little about what needs to be learned.
- Both listing important attributes of competence and describing their integration into performance is a part-whole problem, but assessors are usually trained to focus only on the parts. Too much time is spent on verifying existing piecemeal competences and too little on more holistic challenging assignments that benefit the long-term expertise of workers and their employers.

### *Learning Trajectories*

Trainees in most professions and vocations are allocated to a series of placements, through which they are expected, with suitable support, to acquire the specified level of competence. However, the learning affordances of each placement vary considerably according to the local context, and these differences will affect what each trainee learns and the profile of their competence at the point of qualification. This has two consequences: the variable profile of qualified professionals is unlikely to be well described in their qualification, and their new employers may not be sufficiently informed to make good use of their strengths and improve their relevant weaknesses. These problems could be addressed by the use of learning trajectories both before and after qualification in order to prepare newly qualified professionals for tracking their performance and embarking on a career of lifelong learning.

During two successive research projects on mid-career and early career professional learning in the business, engineering and health-care sectors, Eraut et al. developed a typology (Table 14.1) for classifying what was being learned. However, instead of calling our categories ‘competences’, we called them *learning trajectories* in order to adopt a lifelong learning perspective. Not only did the concept of learning trajectories fit our project’s data more closely than a set of competences (Steadman et al. 2005), but it also included discontinuities of learning so that at any one time:

- Explicit progress is being made on several of the trajectories that constitute lifelong learning.
- Implicit progress can be inferred and then acknowledged as using further trajectories.

**Table 14.1** A typology of learning trajectories

<i>Task performance</i>	<i>Role performance</i>
Speed and fluency	Prioritisation
Complexity of tasks and problems	Range of responsibility
Range of skills required	Supporting other people's learning
Communication with a wide range of people	Leadership
Collaborative work	Accountability
	Supervisory role
<i>Awareness and understanding</i>	Delegation
Other people: colleagues, customers, managers, etc.	Handling ethical issues
Contexts and situations	Coping with unexpected problems
One's own organisation	Crisis management
Problems and risks	Keeping up to date
Priorities and strategic issues	<i>Academic knowledge and skills</i>
Value issues	Use of evidence and argument
<i>Teamwork</i>	Accessing formal knowledge
Collaborative work	Research-based practice
Facilitating social relations	Theoretical thinking
Joint planning and problem solving	Knowing what you might need to know
Ability to engage in and promote mutual learning	Using knowledge resources
	Learning how to use relevant theory (in a range of practical situations)
<i>Personal development</i>	<i>Decision-making and problem solving</i>
Self-evaluation	When to seek expert help
Self-management	Dealing with complexity
Handling emotions	Group decision-making
Building and sustaining relationships	Problem analysis
Disposition to attend to other perspectives	Formulating and evaluating options
Disposition to consult and work with others	Managing the process within an appropriate timescale
Disposition to learn and improve one's practice	Decision-making under pressure
Accessing relevant knowledge and expertise	<i>Judgement</i>
Ability to learn from experience	Quality of performance, output and outcomes
	Priorities
	Value issues
	Levels of risk

- Later work may find that progress on other trajectories is stalling or even regressing through lack of use or because new practices have not yet been adopted.

A second advantage of using learning trajectories is that they can reduce the need to base qualification decisions on limited samples of performance under conditions of high anxiety. Mapping progress over time also measures the ability to learn from experience, probably a better predictor of future performance than a final assessment.

A third advantage is the opportunity to include the context of performance in the learning record. What is learned is affected by the context and conditions for learning, and acquired competence does not usually transfer across contexts without significant further learning. Hence, it is important to include information about context and conditions in the performance record in order to indicate the domain of a person's current competence. Entries on these learning trajectories are best considered as windows on episodes of practice, in which the aspect of learning portrayed by each trajectory plays a significant part. Each entry both presents a single holistic performance and covers all the trajectories that contributed to that performance. The performer is responsible for creating the window but may also get their entry witnessed by other people who can verify it.

Where possible, this entry should include the following information about the performance:

- The setting in which it took place and features of that setting that affected or might have affected the performance
- The conditions under which the performance took place, e.g. degree of supervision, pressure of time, crowdedness, conflicting priorities and availability of resources
- The antecedents to the performance and the situation that gave rise to the performance
- The other categories of expertise involved
- Any differences from previously recorded episodes
- Indicators of expertise in the domain of the trajectory having been maintained, widened or enhanced

The holistic nature of any complex performance should never be neglected, because it is unusual for a performance to use knowledge from only one trajectory, and developing a seamless integration of personal knowledge from several trajectories may itself be an important learning challenge. The implication of using entries based on complete episodes of practice is that:

- The data displayed in each entry represents a whole performance, involving not only the relevant trajectories but also the ways in which they interact.
- Each trajectory contains a sequence of entries to show how its particular track has progressed over time.
- It enables future learning to address both further development along trajectories and whether the right trajectories were chosen and combined in the most appropriate way.

Within this overall framework, it is still possible, indeed desirable, for different types of representation to be used for different trajectories and at different career stages (Eraut 2004).

Another important feature of Table 14.1 is that most trajectories represent complex aspects of work, which cannot be achieved by using only codified knowledge, and may often be subject to some disagreement. But this is not the

**Table 14.2** A typology of learning modes

Work processes with learning as a by-product	Learning activities located within work or learning processes	Learning processes at or near the workplace
Participation in group processes	Asking questions	Being supervised
Working alongside others	Getting information	Being coached
Consultation	Locating resource people	Being mentored
Tackling challenging tasks and roles	Listening and observing	Shadowing
Problem solving	Reflecting	Visiting other sites
Trying things out	Learning from mistakes	Conferences
Consolidating, extending and refining skills	Giving and receiving feedback	Short courses
Working with clients	Use of mediating artefacts	Working for a qualification Independent study

main problem. Our interview-based study of mid-career learning in the business, engineering and health-care sectors found that respondents were unaccustomed to talking about learning, and when they did so, they focused mainly on formal learning rather than informal learning. Moreover, we became acutely aware of the difficulty of getting respondents not only to describe their jobs but also to progress from that description to discuss the nature of the expertise which enabled them to do that job. They were aware that they had learned implicitly to do many things which formed part of their job, but they could not easily describe their own personal knowledge and know-how (Eraut et al. 2005).

### *Developing Complex Performances*

Our study, on early career learning, was better funded, so we were able both to include observation of our participants at work and to conduct a longitudinal study of learning during the first three postgraduate years of prospective chartered accountants, qualified engineers and nurses. This made it much easier to talk about what they were doing in an informal discourse of description, rather than start with interviews that often led to a discourse of justification. Once that was working, we were able to move from what we saw to what we might have seen on other occasions then to ask them about how their work had progressed between our meetings. We also discovered that, even in accountancy, where there were several weeks of formal training each year, the large majority of learning events (at least 80%) were informal. These events were not recognised as learning, because their new knowledge was integrated into their ongoing work. Hence, we called them by-products of working and included them in a second typology focused on the learning modes of early career learners (Table 14.2; Eraut 2007).

The significance of *working alongside others* is that it allows early career workers to observe and listen to other people at work and to participate in their activities and hence learn new practices and new perspectives, become aware of different kinds of knowledge and expertise and gain some sense of other people's tacit knowledge. This mode of learning includes a lot of observation as well as discussion and is extremely important for learning some of the tacit knowledge that underpins routines and intuitive decisions. When people see what is being said and done, explanations can be much shorter because the fine detail of incidents is still in their minds. Other research studies of learning at work also provide evidence for the importance of the non-codified types of personal knowledge listed on page 2.

While experienced colleagues can understand and learn from each other's practice by a combination of discussion and working together, the same assumption cannot plausibly be extended to a group of practitioners with few opportunities for mutual observation. So other modes of communication are needed. Our mid-career study gave us some evidence about what and how some learning took place, so we were able to reflect on factors other than personal characteristics that affected the extent to which respondents seemed able to tell us about their work, even within the limitations of our particular project. These factors affecting the ability to tell were linked to people's prior experiences of talking about what they knew. Thus, talking more explicitly about their knowledge at work was more likely to occur when there was:

- A climate of regular mutual consultation encouraging those consulted to describe what they know
- A training or mentoring relationship in which explanations were expected, sometimes of cultural or behavioural norms as well as more technical matters
- Informal relationships leading to work-related discussions of information out of hours, when more 'provisional' and 'riskier' comments might be made that conveyed some meaning but were not understood as pretending to be comprehensive or accurate
- A crisis, review or radical change in practice, which caused people to exchange opinions and experiences

Another factor was the role of continuing education in the form of courses or serious reading. For many respondents, this added an important dimension to their ability to think and talk about their work situation because it provided (1) a vocabulary for talking about aspects of their experiences which had been previously difficult to discuss and (2) concepts and theories which helped them to make sense of their experience and understand issues and alternative perspectives more clearly. This was particularly true of mid-career courses which build on participants' experiences, the most frequently cited examples being in management. For example, studying organisational behaviour helped our respondents to comprehend aspects of their own context of which they were partially aware but had not previously understood, and studying the management of change helped them to understand why so many new initiatives had failed to be fully implemented and ground to a

halt. Many people were helped to move their thinking from a purely organisational level to a strategic level and/or to see their organisation's relationship with its environment from a different perspective. The net effect was an enhanced capacity and encouragement for people to think and talk about their own work and its organisational context (Eraut et al. 1998; Eraut and Hirsh 2007). Such educational experiences were not simply making tacit knowledge explicit but using some of their tacit knowledge as one component of a more developed, as well as more explicit, understanding of their working situation. The conclusion we drew from these situations was that improving communication and sharing expertise with others led to further understanding and more in-house innovations.

However, decision-making in complex environments is often more fluid and unpredictable than most trainers assume. Klein et al. (1993) argue that decision-making in practice may encounter many of the following difficulties:

- Problems are ill structured
- Information is incomplete, ambiguous or changing
- Goals are shifting, ill defined or competing
- Decisions occur in multiple event-feedback loops
- Time constraints exist
- Stakes are high
- Many participants contribute to the decisions

## **Handling Change and Complexity Through Creating and Re-creating Mediating Artefacts**

This section focuses on how workers handle change and complexity, starting with examples from school textbooks, accountancy, nursing and surgery. My first example comes from an Anglo-German project on the structure, style and classroom use of textbooks. Our goal was to develop a framework for teachers to analyse their text books and how they used them. The existing work on text books acknowledged their importance but treated textbooks as artefacts chosen by teachers, schools or school districts in order to mediate particular forms of knowledge to students. The books themselves were seen as important but fixed artefacts. However, we chose to develop a divergent approach that assumed that classes using the same textbooks would use them in different ways, according to the teachers' preferences and the responses of their students. The analysis of the book itself included the perceived priorities of the author(s) and their assumptions about learning, the variety of ways in which it was used by teachers and by students and its explicit or implicit values (Eraut et al. 1975). This involved not just understanding the affordances of the book but also its suitability for different students. Students' engagement with textbooks varied according to how they understood and valued its content, how their teachers were using them and how different students were using them.

Our workshops started with teachers analysing their own textbooks and meeting other teachers using the same or different textbooks for the same year and subject. They soon found that other teachers used the same book in very different ways and some wanted to change to other textbooks. More importantly, they found new ways of using their own textbooks and became more aware of where further material might be needed. This re-creation of the textbook encouraged participants to learn from divergent approaches, and their reports were sufficiently detailed to provide new ideas to teachers not present at the workshop.

The most substantial use of *mediating artefacts* in our Early Career Learning project was the *chartered accountants*. Their most important role is to conduct annual audits, and their artefacts were the accounts themselves. Both accounts from the previous year and the developing accounts for the current year provide a framework for trainees throughout their ‘apprenticeship’. They start with short simple accounts in small audit teams led by other trainees a year ahead of them, and they begin to contribute to the accounts from their first month. They are usually near to someone only a few months ahead of them, so they are not afraid to ask questions. They soon learn to look for work they can do on the current audit, and they witness discussions about the strategy of the audit whenever unexpected problems occur. This usually means that more time is needed in one part of their account, and they have to decide what to reduce to make up for it. Most of their work is on client premises, where they gradually learn the many ways through which business processes can be represented, or possibly misrepresented, by appropriate sets of accounts. The central role of audits is the translation of the clients’ business practices into audited accounts, and since accountancy trainees encounter a wide range of business models, many of them find this an ideal route into business or public sector jobs. Another feature is the growing use of expensive software packages of considerable range and scope, which final-year trainees gradually learn to use over a series of increasingly difficult assignments. New financial practices are always being developed, and accountants’ contracts are very competitive. Hence, both organisations and auditors frequently re-create their financial artefacts.

An earlier nursing study (Eraut et al. 1995) was concerned with the lack of sufficient connection between student nurses learning in university and hospital settings and selected six key areas for observation: acute pain; fluids, electrolytes and renal systems; nutrition, shock; stress and self-esteem. One recommendation was to create a 2-dimensional matrix, using *theoretical topics* for rows and *hospital activities* for columns. The topic of causes of pain was one row and signs of infection was a column. When one group of nurse teachers suggested that these diagrams looked too tidy, we suggested that they were like Pandora’s box, whose opening led to a further set of hidden problems waiting to be tackled. We had no evidence that these entries had the same meanings for those who suggested them, but it did give us the possibility of exploring those boxes in depth without feeling that we had to discuss all the other boxes on causes of pain at the same time, i.e. it did not claim

that these problems were not connected with others. Thus, the original mediating artefact for acute pain could work as a reminder, but making good decisions would depend on more precise responses for each active box. This could be achieved by more experienced nurses sharing their experiences, exploring differences between patients seen as similar and consulting others if necessary.

Eraut's (2008) evaluation of the learning of registrars<sup>3</sup> for the Royal College of Surgeons found that a combination of the European Working Time Directive (EWTD) and the move to sub-specialties meant that trainees and their trainers were not often on the same shift. This made it necessary for registrars to have two or three trainers, but these trainers never met to discuss the progress of their trainees, and the experiences of operations not observed by a trainer were effectively ignored. Since progress in surgery depends on trainers having a high level of trust in their trainees, based on seeing them operate under their own eyes, operations taking place with other trainers make little or no contribution to the trust of those who were not present. Not only do trainees have less overall time than before, but the need to be trusted by all their trainers individually hugely reduces their rate of progress.

I am now trying to persuade trainers and trainees to take still pictures at key points during operations, so that trainer and trainee can discuss the pictures soon after the operation. My suggestion is that each of them should tell the other what they were thinking about at the time when each picture was taken and record the conversation. The trainee will learn more about the trainer's concern for safety and about parts of the operation where their knowledge was still limited. The trainer will get a much clearer sense of what the trainee was thinking while she/he was operating and a chance to give them appropriate advice on the spot. The trainee would then be responsible for sending copies of these audiotapes to their other trainers, who would then have a much clearer picture of that trainee's capability at that particular time. In both these examples, still pictures create much better mediating artefacts than videos because they give more power to the learners and create more relevant ideas.

We are continually reminded about the need for more skilled and more flexible workers, but our qualifications and learning support systems are only rarely focused on innovation and change at a micro level. Engestrom (1987) and Engestrom et al. (2003) have shown how bringing people together with a series of mediating artefacts can create new approaches to important problems at a local level, and some of my examples have addressed even simpler ways of designing artefacts. Most of these examples involved groups rather than individuals, and this is crucial to the use of mediating artefacts. When artefacts are seen as mediating tools rather than reified knowledge, we come to recognise that much of our knowledge lies in the discussions we have around mediating artefacts rather than in the artefacts themselves. This then creates opportunities for the re-creation of the original artefact.

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<sup>3</sup>The final stage before becoming an independent consultant.

## References

- Bolden, R., & Gosling, J. (2004, September). *Leadership and management competencies: Lessons from the national occupational standards*. Paper presented to BPS Social Psychology Section Conference, University of Exeter, Centre for Leadership Studies.
- Engestrom, Y. (1987). *Learning by expanding: An Activity-theoretical approach to developmental research*. Helsinki: Orienta-Konsultit.
- Engestrom, Y., Engestrom, R., & Kerosuo, H. (2003). The discursive construction of collaborative care. *Applied Linguistics*, 24(3), 286–315.
- Eraut, M. (1997). Perspectives on defining ‘The Learning Society’. *Journal of Education Policy*, 12(6), 551–558.
- Eraut, M. (1998). Concepts of competence. *Journal of Interprofessional Care*, 12(2), 127–139.
- Eraut, M. (2000). Non-formal learning and tacit knowledge in professional work. *British Journal of Educational Psychology*, 70, 113–136.
- Eraut, M. (2004). Informal learning in the workplace. *Studies in Continuing Education*, 26(2), 247–273.
- Eraut, M. (2007). Learning from other people in the workplace. *Oxford Review of Education*, 33(4), 403–422.
- Eraut, M. (2008). *Evaluation of the introduction of the intercollegiate surgical curriculum programme*. London: Royal College of Surgeons.
- Eraut, M., & Hirsh, W. (2007). *The significance of workplace learning for individuals, groups and organisations* (SKOPE Monograph 6). Oxford: University of Oxford, SKOPE.
- Eraut, M., Goald, L., & Smith, G. (1975). *The analysis of curriculum materials*. University of Sussex Education Area Occasional Paper 2, Sussex.
- Eraut, M., Alderton, J., Boylan, A., & Wraight, A. (1995). *Learning to use scientific knowledge in education and practice settings*. London: English National Board for Nursing, Midwifery and Health Visiting.
- Eraut, M., Steadman, S., Trill, J., & Parkes, J. (1996). *The assessment of NVQs* (Research Report No. 4). Sussex: University of Sussex Institute of Education.
- Eraut, M., Alderton, J., Cole, G., & Senker, P. (1998). Learning from other people at work. In F. Coffield (Ed.), *Learning at work*. Bristol: The Policy Press.
- Eraut, M., Steadman, S., & James, J. (2001). *Evaluation of higher level nVQs* (Research Report No. 9). Sussex: University of Sussex Institute of Education.
- Eraut, M., Maillardet, F., Miller, C., Steadman, S., Ali, A., Blackman, C., & Furner, J. (2005). *What is learned in the workplace and how? Typologies and results from a cross-professional longitudinal study*. EARLI biannual conference, Nicosia.
- Hackman, J. R. (1987). The design of work teams. In J. Lorsch (Ed.), *Handbook of organizational behavior* (pp. 315–342). Englewood Cliffs: Prentice-Hall.
- Klein, G. A., Orasanu, J., Calderwood, R., & Zsombok, C. E. (Eds.). (1993). *Decision-making in action, models and methods*. Norwood: Ablex.
- Salas, E., Dickinson, T. L., Converse, S. A., & Tannenbaum, S. I. (1992). Toward an understanding of team performance and training. In R. Swezey & E. Salas (Eds.), *Teams: Their thinking and performance*. Norwood: Ablex.
- Steadman, S., Eraut, M., Maillardet, F., Miller, C., Furner, J., Ali, A., & Blackman, C. (2005). *Methodological challenges in studying workplace learning: strengths and limitations of the adopted approach*. Paper for BERA Annual Conference, Pontypridd.
- Weick, K. E. (1983). Managerial thought in the context of action. In C. Srivastva (Ed.), *The executive mind*. San Francisco: Jossey-Bass.

# Chapter 15

## Conceptual Change Research in TVET

Waldemar Bauer

### Introduction

For more than 30 years, there has been fundamental research among science education and cognitive scientist concerning the question what people think about natural phenomena, how they develop concepts in the sense of mental representations concerning these phenomena and how they apply this knowledge in their daily lives. This research has shown that children already attained a common-sense understanding of everyday phenomena such as light, heat or force when they first begin school. These intuitive conceptualisations of everyday phenomena are different from those of scientific concepts (Schnotz et al. 1999). Also, university students have such alternative conceptions after completing secondary school. This type of understanding is also known as prior knowledge, informal knowledge, intuitive conceptions, naïve theories or misconceptions.

Related to Kuhn's explanation, this research field is called conceptual change research. The core issue of conceptual change research is related to this potential conflict between common sense versus scientific use of language and to the change from intuitive and everyday use of terms to a more relevant scientific use and understanding. In the past, research of conceptual change tends to focus on identifying students' misconceptions that are erroneous from the scientists' standpoint. Conceptual change in an educational perspective requires the effort to replace or remove such alternative conceptions with 'correct' scientific theory.

A very typical example is Newton's second law and the conception of force. In physics, a force is any influence that causes a free body to undergo acceleration. It is a magnitude and direction, making it a vector quantity. However, many studies

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demonstrate that the phenomena force is described in different forms. A common misconception, which lasts back to Aristotelians explanation of force, is an animistic conception, in which force is supposed to be the source of any movement, hence, it enables to push or pull an object. Individuals often think that force is a property of the body; this is an impetus conception of force. Another misconception refers to the confusion of force and acceleration.

Researchers in this educational research field have provided several theories and models explaining the structure and content of intuitive conceptions, misconceptions or naïve theories as well as the process of its development which are activated through formal learning arrangements. Most models assume that the naïve or subjective theories possess certain elements which have a generic character. Therefore, they are called conceptions. Researchers in the field of conceptual change ask how intuitive conceptions or naïve theories can develop better in formal learning arrangements.

In spite of the advanced theoretical and methodological state of the art and the number of studies in science and mathematics education, it has to be stated that conceptual change research is not very common in the field of technical vocational education and training. In the following, conceptual change research will be discussed in the context of TVET research.

### ***Theoretical Background***

The conceptual change approach to learning and teaching has its roots in Kuhn's revolutionary account of theory change in the history of science (Kuhn 1962). Kuhn proposed that the development of science is not a cumulative but a revolutionary process in which one theory or paradigm is replaced by a radically different one. This account of theory change has served as a source of hypotheses about how concepts change not only in the philosophy and history of science but also in the process of learning science (Posner et al. 1982).

The basis for the analogy between scientific theory change and the learning of science became the realisation that students do not enter the classroom with empty heads, but they bring to the science learning task prior knowledge, intuitive conceptions or preconceptions corresponding to natural phenomena. In the beginning, researchers argued that these intuitive conceptions can be seen as theories that need to be replaced or adjusted by the currently accepted, correct, scientific views through a process of conceptual change (Posner et al. 1982; McCloskey 1983; Carey 1985).

In an attempt to clarify the concept of conceptual change, various theorists have offered competing views of the change process. Conceptual change research has traditionally a strong relationship to cognitive theories. Especially Piagetian learning theory has influenced many researchers in explaining conceptual change. The theories include the early perspective of exchanging conceptions (e.g. Posner et al. 1982), many models of developmental psychology such as restructuring and

accumulating conceptions (e.g. Vosniadou and Brewer 1992; Chi 1992) and social constructivist approaches (e.g. Säljö 1999), which refer to the concept of cultural mediation and social constructivism of Vygotsky (1964).

One of the first conceptual change theories, which correspond to Kuhn's notion of a paradigm shift and Piaget's notion of accommodation, was defined by Posner et al. (1982). There are two parts in Posner's theory. One refers to the conceptual context of the learner in which learning takes place. This is labelled as the conceptual ecology. The learner's conceptual ecology consists of current conceptions and ideas rooted in their epistemological beliefs. It determines the way the learner handles old conceptions and responds to new conceptions. Therefore, it serves to structure conceptual change. The other part of this theory includes a set of conditions which are required for conceptual change to occur. Successful change can only be realised if the learner is dissatisfied with current conceptions and the new concept is intelligible, plausible and fruitful.

Another prominent conceptual change theory is Vosniadou's framework theory (Vosniadou and Brewer 1992; Vosniadou 1994), which describes conceptual change as a gradual revision of mental models. Vosniadou explains that students already have naïve knowledge or initial conceptions about physical phenomena. This model assumes – like many other theories – that such initial conceptions may not be a part of the coherent system of scientific concepts taught in school, but they are relatively stable and resistant to change as they are deeply rooted in daily life experiences and are continuously supported by such experiences as a coherent explanatory structure.

Vosniadou and her colleagues have attempted to provide detailed descriptions of the development of knowledge in several areas of the natural sciences, such as observational astronomy, geophysics, mechanics, chemistry and biology (e.g. Vosniadou and Brewer 1992; Vosniadou and Ioannides 1998; Vosniadou 1999). The results of these studies have shown that young children in the process of learning science usually add the new scientific information to their initial explanatory frameworks. Thus, they generate synthetic models as a bridge between their initial framework theory and observations that do not conform to the framework. This is conceived to be a gradual process that can result in a progression of mental models. For example, elementary school students consistently constructed the Earth models in disc or rectangular flat shape based on their everyday experience. Vosniadou and Brewer (1992) called these 'initial' models because they are not affected by the scientific model of the Earth. Older students constructed a synthetic Earth model, which is the Dual Earth with a hollow and flattened sphere, influenced by the spherical shape of the Earth from instruction.

The framework theory perspective is consistent with Chi's (1992) argument that conceptual change requires an ontological shift. She uses a metaphysical approach and bases her conceptual change model on the fundamental categories of ontology in order to determine the nature of being. Entities may be viewed as belonging to different ontological categories which include matter (things), process and mental states. There are also subcategories embedded within the trees. For example, processes can be broken down into events, procedures and constraint-based interactions; matter can be broken down into natural kinds and artefacts.

Conceptual change is explained as overcoming ontological categorisation errors and thus as a higher level ontological shifts. Chi believes that the conceptual change process is hard because either the student assigns the concept to a different ontological category from the scientific one or the student lacks an appropriate category to which the concept could be assigned. For example, students have difficulties understanding scientific concepts such as force, heat, light and electricity because these concepts are all perceived as being matter rather than processes. If students become aware of their ontological commitments, they can then become aware of how the scientific theory does not fit with their existing knowledge structure. In turn, they can assign the concept into a correct category by revising their ontological commitments, categories and presuppositions.

The aforementioned theories can be summarised to knowledge-as-theory perspectives. This position claims that intuitive conceptions, prior beliefs or knowledge have a coherent structure like a theory. This perspective has wide support within the science education community. However, several researchers (Anderson 1993; diSessa 1993; Thagard 1992) have proposed opposing perspectives that characterise students' understanding in terms of collections of multiple quasi-independent elements including, but not limited to, facts, facets, narratives, concepts and mental models at various stages of development and sophistication (Özdemir and Clark 2007).

diSessa's model (1988, 1993) is the most well known of the knowledge-as-elements perspectives. He proposes that the knowledge structures of novices consist primarily of unstructured collections of many simple elements so called p-prims (phenomenological primitives). P-prims are generated from a learner's experiences, observations and abstractions of phenomena through a sense-of-mechanism that reflects our interactions with the physical world. They do not have the status of a theory because they are not produced or activated under a highly organised knowledge system, but they are loosely connected into larger conceptual networks. Novices spontaneously connect and activate these knowledge pieces according to the relevance of the situation. Conceptual change to diSessa is the reorganisation of diverse kinds of knowledge into complex systems in students' minds. In this view, conceptual change means organising cognitively fragmented naïve knowledge.

Ivarsson et al. (2002) take a more radical stance in that they think naïve conceptions do not serve a purpose in conceptual change because conceptual change is the appropriation of intellectual tools. In this view, conceptual change results from changes in the way that students use the tools in various contexts, and the change actually occurs at the societal level in a historical and cultural context. In other words, it is a genre of language or a language game (Wittgenstein 1993).

There are significant similarities and differences between knowledge-as-theory and knowledge-as-elements perspectives. All models assume that learners acquire knowledge from daily experience and that this everyday knowledge influence formal learning. All theories claim that learning means somehow developing and changing existing concepts and that new knowledge must be integrated into existing knowledge structures.

There are some differences which are highly relevant for many research tasks. The first discrepancy refers to the terminology and concept of everyday knowledge and the mental organisation of this type of knowledge. It is called prior beliefs, preconceptions, alternative conceptions, intuitive conceptions, naïve theories or even misconceptions. All these concepts refer to other psychological or sociological theories concerning subjectivism such as personal constructs theory (Kelly 1955), naïve personality theories (Laucken 1974), subjective theories (Groeben et al. 1988), habitus (Bourdieu 1992) and tacit knowledge (Polanyi 1958), which are not subject of discussion in this chapter. In conceptual change research, there is a debate on the structural properties of naïve knowledge or intuitive conceptions and on the consistence of the knowledge structure and elements. The second dispute refers to the process of conceptual change or knowledge acquisition. It is asked if this change is revolutionary or evolutionary. Investigating these unclear questions is fundamental for any type of research on knowledge, expertise and human activity.

The conceptual change approach was the leading paradigm in science education until it became subject to several criticisms, regarding both its epistemological beliefs and its instructional practices. The situated approach movement has drawn the attention of learning to certain aspects that were not considered important in the context of cognitive approaches, such as the relevance of the social and cultural context in which learning takes place (Lave 1988; Sajö 1999; Anderson et al. 1996). Cognitive conceptual change research has not considered evolutionary factors, as well as individuals' interaction with their physical and social environment and the cultural tools which they have available in the formation of theories or concepts.

Proponents of situated and constructivist approaches criticise cognitive conceptual change theories (Stark 2002). First, it is argued that the majority of the conceptual change theories are predominately deficit driven. They study what people do not know or what they are not able to do. Obviously, there is only one type of appropriate knowledge which is a unique scientific concept. This refers to a second critique concerning the reference system of theories: traditional science education ignores the interrelations with other concepts, as well as their interaction with the situational context in which the concepts are invoked (Caravita and Halldén 1994). The situated approach pointed out the mismatch between the way a subject is taught in schools and the way it is used in real-life situations. It is argued that many school activities may be meaningless for students and this may be a source of creating inert knowledge that cannot be transferred to out-of-school situations (Brown et al. 1989). Many misconceptions do not have an effect on everyday life or a disadvantage for individual's activity. For example, what does a car driver know about thermodynamic phenomena such as enthalpy or entropy in the engine (e.g. four-stroke combustion cycle), when using the vehicle? Even a professional auto mechanic might have developed a concept that is different from an engineer's concept, who designs thermodynamic systems. It is assumed that misconceptions are very resistant against change because they do not have practical consequences.

Proponents of situated learning theory argue that concepts in fact are context specific and not general. The relations of actions and situations, which are 'situated actions' (Suchman 1987), are essential for learning. Most learning occurs naturally

through activities, contexts and cultures (Lave 1988). They claim for a context model and for distinguishing between different context-specific experts' models instead of distinguishing between correct and erroneous scientific concepts. Caravita und Halldén (1994) differentiates between everyday and scientific context. Consequently, the validation criterion for accurate concepts shall be the functionality of a concept within a certain context and not its veridicality.

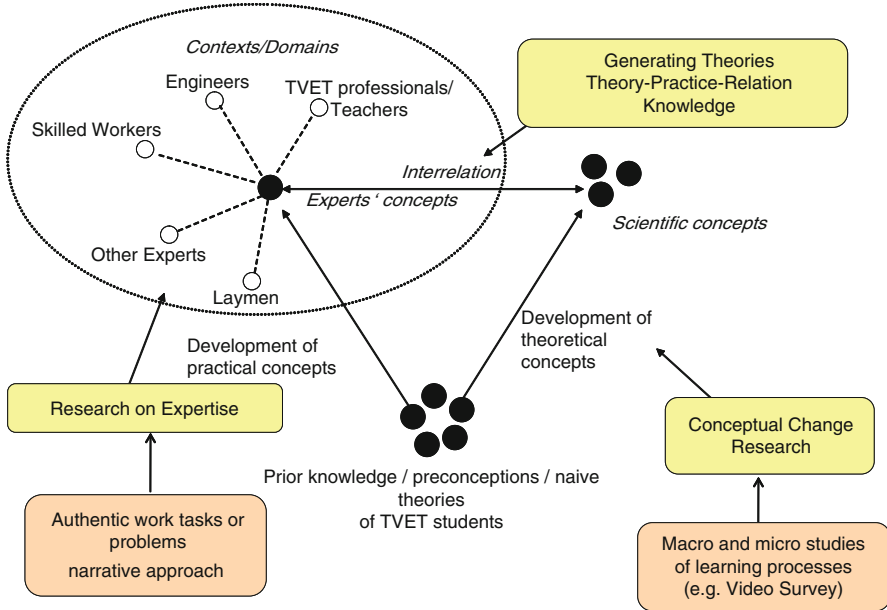
This aspect corresponds to Holzkamp's notion of practical concepts (1985). He claims that concepts which individuals use in life are basically practical because they are results of hypostatising processes. Concepts consist of elements forming a scope leading to different context-depending meanings. They are affected by the individual developmental processes. Scientifically defined concepts, however, represent only one element of the scope of practical concepts (Rauner 2007), which might not be the action-leading one. This issue is highly important for the description of knowledge structure and the network of various concepts. For example, research found out that misconceptions and scientific conceptions can exist in one person without causing cognitive conflicts (Clement 1982).

At this point another issue occurs: language plays an important role in articulating mental representations and knowledge acquisition. Therefore, it is necessary to study the influence of language in the development of concepts. For example, the connotation of the English concept of force is different from the German concept of force (Kraft). Even the words concept and conception have different etymological meanings which could be draft, the act of conceiving or even scope like in German.

Generally speaking, most conceptual change theories provide a rather simplistic view of misconceptions, as being unitary, faulty conceptions. Many theories, models and standardised test of cognitive or developmental psychology are ultimately based on factual or declarative knowledge which has its roots in scientific concepts (e.g. the correct definition or formula of electric voltage). Even PISA tasks which are supposed to be competence-based and related to problems in everyday life are finally focussed on the identification of this type of knowledge or scientifically correct concepts, respectively.

This rather provides a simple model of knowledge and its relevance in action, but the knowledge system consisting of many different elements is organised in a more complex way, which highly depends on the societal and cultural context and the practical usage. Some researchers like Gardner criticised this approach and provided 'alternative conceptions' with his multiple intelligence theory (2002). Also, research on expertise provided remarkable findings and explanatory theories concerning the structure, organisation and development of domain-specific knowledge and expertise. Unfortunately, this research has never studied the fundamental concepts or epistemological beliefs in experts' action.

In TVET, there is a lively discussion based on different knowledge conceptions such as the work process knowledge model (Boreham et al. 2002; Fischer and Rauner 2002). This crucial knowledge category has been identified and explored in numerous studies as a form of knowledge fundamental to work activity and vocational learning. In social science, there are also proponents claiming for a practical turn in social science and theories. Recently, Reckwitz (2003) published a



**Fig. 15.1** Approach of conceptual change research in TVET

specific theory of social practice (Reckwitz 2003) which provides a different logic of practice expressed in the epistemological beliefs, concepts, knowledge, interest, functions and artefacts in human activity. Activity then is the connection between structures and individuals, which shall be studied concerning the structuring sociocultural practice and the tacit knowledge expressed in the local situation.

In this light, the category of practical knowledge as well as practical concepts shall be examined in more detail. Further research should focus on the elements and structure of knowledge or concepts, the formation of concepts and the application of concepts in practice and individual's activity.

### ***Conceptual Change Research in TVET***

Conceptual change research is highly relevant for technical vocational education and training; however, a different conceptualisation of knowledge and concepts is needed. Since activity in occupational fields or technical domains is very practical, the questions occur if internalised concepts are also practical and if they differ from scientific concepts.

The following objects of investigation could be outlined for conceptual change research in TVET (see Fig. 15.1):

- Identifying key experts' concepts in different domains or occupational fields respecting work activity at different levels and contexts (e.g. skilled worker,

engineer, manufacturing, service, research and development). This research should focus the elements, structures and functionality of experts' concepts. This is a specific kind of research on expertise.

- Identifying TVET students' initial concepts concerning most relevant natural phenomena. This also includes the formation of concepts of graduates of secondary schools. It would be interesting to identify patterns in different countries and educational systems.
- Analysing the formation of TVET-relevant concepts through formal learning processes. Probably systemic, international and domain-specific issues are relevant in this area. It might be interesting investigating the influences of TVET systems and different learning strategies and modes (e.g. school-based education, in-company or corporate training).
- Analysing the interrelation between scientific concepts, experts' concepts and initial conceptions.
- Providing recommendations for instruction and the design of learning in TVET settings.

This research task cannot be realised with one single study and one specific methodology like current competence research does promote. Psychometrics and probabilistic test theories might be useful for conceptual change research, but they are limited in identifying individuals' thinking and exploring the in-depth structure of knowledge and mental representations. For example, we intend to identify the conceptions of an electrician concerning electric fundamentals such as electric field, voltage and current and their relevance in practice. If we would apply standardised tests, then we might find out his or her knowledge about correct definitions or formula; the focus will be scientific conceptions. If we would ask this expert directly in an interview situation, then he or she might be reminded being in school causing cognitive and contextual shift in the mind of the individual. He or she will think that the interviewer wants to know the correct definition of the related phenomena like a teacher would expect in classroom. Thus, we would never find out the real concept of this expert and its relevance in his activity or professional situation. Against this background research on expertise in this field needs methods which are closer to authentic activity, action-related knowledge and respecting domain and context specificity. Ethnomethodology, studies of work, research on expertise and current TVET research (e.g. Fischer and Rauner 2002; Becker and Spöttl 2008) have provided many methods enabling the collection of this information which detects and describes professional reality.

For examining conceptual change processes, there are also a lot of qualitative and quantitative methods. One very common methodology is videotaping instruction; TIMSS was the first attempt to collect videotaped records of classroom instruction from national probability samples.

Video survey can provide detailed permanent real-time records of teaching and learning that enable coding a variety of characteristics reliably and detecting patterns within learning arrangements (Pauli and Reusser 2006). Thus, they offer new possibilities in this research field. They allow (1) large-scale sampling and

standardised measurement of context variables, student characteristics and teacher characteristics; (2) process analyses of teaching and learning within classrooms or workshops, based on high- to low-inference coding of videotaped lessons; and (3) contrastive studies and microanalytical case studies using interpretative approaches. However, it has to be stated that TVET includes practical training processes which must be investigated; thus, school-based video approaches need to be developed further.

## Conclusion

Research points out that advocates of conceptual change have narrowly focused on mathematics and science but that a closer look at other subject areas indicates that conceptual change might be discipline, domain or even topic specific. Empiric TVET research should investigate in a domain- and context-specific mode the professional knowledge, fundamental concepts and epistemological beliefs which guide experts' activity as well as the impact on professional concepts and TVET learning. This is fundamental research referring to knowledge organisation and structure as well as to the oldest problem in TVET which is the interrelation of theory and practice.

Conceptual change researchers advise (Mayer 2002) that there is need to specify testable theories about the mechanisms of conceptual change and find ways to test them empirically. On the one side, this is a very important argument, which should be realised. On the other side, the applied methodology of psychometrics is not sufficient to explore this human and social phenomenon because it requires a practical turn. Thus, triangulation approaches using ethnomethodological approaches, narrative and interpretative instruments should be integrated to identify meaningful and action-guiding concepts and knowledge, as well as behavioural strategies, embedded in and supported by the process of professional identity-building (Rauner 2007).

The current research in the field of competence diagnostic is focused very much on probabilistic test theories derived from the PISA approach. Most studies start the competence analysis with initial tests based on pure factual knowledge or correct scientific concepts (e.g. traditional IQ test, standardised physics or mathematics tests). Later, this type of knowledge is the main predictor for assessing competence in a professional context. The problem is very obvious: if factual knowledge or scientific conceptions are not the only or even wrong influencing factors of competence or expertise in a specific field of practice, a wrong correlation between predictor and competence will be derived. In this light, the current research on competence needs the identification of fundamental concepts of practitioners.

Furthermore, this TVET research will be very useful for the TVET practice. If TVET teachers or trainers would have some knowledge with regard to the intuitive concepts of their students, they could better estimate learning barriers and problems

of knowledge acquisition. Knowledge concerning intuitive concepts, their formation and the relation to practice could foster the derivation of realistic educational purposes and the quality of learning in TEVT. Additionally, videotapes are very useful tools in teacher education and for didactical issues.

## References

- Anderson, J. R. (1993). *Rules of the mind*. Hillsdale: Lawrence Erlbaum Associates, Inc.
- Anderson, J. R., Reder, L. M., & Simon, H. A. (1996). Situated learning and education. *Educational Researcher*, 25, 5–11.
- Becker, M., & Spöttl, G. (2008). *Berufswissenschaftliche Forschung*. Frankfurt am Main: Ein Arbeitsbuch für Studium und Praxis.
- Boreham, N., Fischer, M., & Samurçay, R. (Eds.). (2002). *Work process knowledge*. London: Routledge Research.
- Bourdieu, P. (1992). *Die feinen Unterschiede. Kritik der gesellschaftlichen Urteilskraft*. Frankfurt am Main: Suhrkamp.
- Brown, J. S., Collins, J. S., & Duguid, P. (1989). Situated cognition and the culture of learning. *Education Researcher*, 18(1), 32–42.
- Caravita, S., & Halldén, O. (1994). Reframing the problem of conceptual change. *Learning and Instruction*, 4, 89–111.
- Carey, S. (1985). *Conceptual change in childhood*. Cambridge: MIT Press.
- Chi, M. T. H. (1992). Conceptual change in and across ontological categories: Examples from learning and discovery in science. In R. Giere (Ed.), *Cognitive models of science* (pp. 129–160). Minneapolis: University of Minnesota Press.
- Clement, J. (1982). Student's preconceptions in introductory mechanics. *American Journal of Physics*, 55(0), 66–71.
- diSessa, A. A. (1988). Knowledge in pieces. In G. Forman & P. B. Pufall (Eds.), *Constructivism in the computer age* (pp. 49–70). Hillsdale: Lawrence Erlbaum Associates, Inc.
- diSessa, A. A. (1993). Toward an epistemology of physics. *Cognition and Instruction*, 10(2 & 3), 105–225.
- Fischer, M., & Rauner, F. (Eds.). (2002). *Lernfeld: Arbeitsprozess. Ein Studienbuch zur Kompetenzentwicklung von Fachkräften in gewerblich-technischen Aufgabenbereichen*. Baden-Baden: Nomos.
- Gardner, H. (2002). Intelligenzen. *Die Vielfalt des menschlichen Geistes*. Stuttgart: Klett-Cotta.
- Groeben, N., Wahl, D., Schlee, J., & Scheele, B. (1988). *Forschungsprogramm Subjektive Theorien*. Tübingen: Eine Einführung in die Psychologie des reflexiven Subjekts.
- Holzkamp, K. (1985). *Grundlagen der Psychologie*. Frankfurt am Main/New York: Campus.
- Ivarsson, J., Schoultz, J., & Säljö, R. (2002). Map reading versus mind reading: Revisiting children's understanding of the shape of the earth. In M. Limón & L. Mason (Eds.), *Reconsidering conceptual change: Issues in theory and practice* (pp. 77–99). Dordrecht: Kluwer.
- Kelly, G. A. (1955). *The psychology of personal constructs*. New York: Norton.
- Kuhn, T. S. (1962). *The structure of scientific revolutions*. Chicago: University of Chicago Press.
- Laucken, U. (1974). *Naive Verhaltenstheorie*. Stuttgart: Klett.
- Lave, J. (1988). *Cognition in practice: Mind, mathematics, and culture in everyday life*. Cambridge: Cambridge University Press.
- Mayer, R. E. (2002). Commentary. In M. Limón & L. Mason (Eds.), *Reconsidering conceptual change: Issues in theory and practice* (pp. 101–111). Dordrecht: Kluwer.
- McCloskey, M. (1983). Naïve theories of motion. In D. Gentner & A. L. Stevens (Eds.), *Mental models* (pp. 299–324). Mahwah: Lawrence Erlbaum Associates.

- Özdemir, G., & Clark, D. B. (2007). An overview of conceptual change theories. *Eurasia Journal of Mathematics, Science & Technology Education*, 3(4), 351–361.
- Pauli, C., & Reusser, K. (2006). Von international vergleichenden Video Surveys zur videobasierten Unterrichtsforschung und entwicklung. *Zeitschrift für Pädagogik*, 6(52), 774–797.
- Polanyi, M. (1958). *Personal knowledge: Towards a post-critical philosophy*. Chicago: University of Chicago Press.
- Posner, G. J., Strike, K. A., Hewson, P. W., & Gertzog, W. A. (1982). Accommodation of a scientific conception: Toward a theory of conceptual change. *Science Education*, 66, 211–227.
- Rauner, F. (2007). Practical knowledge and occupational competence. *European Journal of Vocational Training*, 1(40), 52–66.
- Reckwitz, A. (2003). Grundelemente einer Theorie sozialer Praktiken: Eine sozialtheoretische Perspektive. *Zeitschrift für Soziologie*, 4, 282–301.
- Saljö, R. (1999). Concepts, cognition and discourse: From mental structures to discursive tools. In W. Schnotz, S. Vosniadou, & M. Carretero (Eds.), *New perspectives on conceptual change* (pp. 81–90). Oxford: Elsevier.
- Schnotz, W., Vosniadou, S., & Carretero, M. (Eds.). (1999). *New perspectives on conceptual change*. Oxford: Elsevier.
- Stark, R. (2002). *Conceptual change: kognitivistisch oder kontextualistisch?* (Forschungsbericht Nr. 149). München: Ludwig-Maximilians-Universität, Lehrstuhl für Empirische Pädagogik und Pädagogische Psychologie.
- Suchman, L. A. (1987). *Plans and situated actions*. New York: Cambridge University Press.
- Thagard, P. (1992). *Conceptual revolutions*. Princeton: Princeton University Press.
- Vosniadou, S. (1994). Capturing and modeling the process of conceptual change. *Learning and Instruction*, 4, 45–69.
- Vosniadou, S. (1999). Conceptual change research: State of the art and future directions. In W. Schnotz, S. Vosniadou, & M. Carretero (Eds.), *New perspectives on conceptual change*. Amsterdam: Elsevier.
- Vosniadou, S., & Brewer, W. F. (1992). Mental models of the earth: A study of conceptual change in childhood. *Cognitive Psychology*, 24, 535–585.
- Vosniadou, S., & Ioannides, C. (1998). From conceptual development to science education: A psychological point of view. *International Journal of Science Education*, 20, 1213–1230.
- Vygotsky, L. S. (1964). *Denken und Sprechen*. Stuttgart: Fischer.
- Wittgenstein, L. (1993). *Tractatus logico-philosophicus, Tagebücher 1914–1916, Philosophische Untersuchungen*. Frankfurt am Main: Suhrkamp.

# Chapter 16

## Experiential Learning Assessment and Competence Development for a Second Career: The Case of Alternating Training Programmes for Professional Promotion

Philippe Astier and Lucie Petit

### Introduction

From the thirteenth century to 1791, when it was abolished in France, the organisation in guilds of numerous crafts was based on an apprenticeship with a master craftsman for those who wished to practise them. During the nineteenth century, the system of apprenticeship evolved according to laws governing it and changes made to both the educational and employment systems. The major evolution of its organisation lies in the succession of periods during which one practises the activity in the workplace and periods during which he or she gets acquainted with general, theoretical or technical knowledge.

For a long time, apprenticeship was related to low-skilled handicrafts and to young people who failed in the regular school system. In the current French vocational education system, it consists of a specific work contract and training programme<sup>1</sup> for youngsters aged from 16 to 25 years old who want to pursue a vocational education.

Given that after their training, apprentices manage to find a job easily, the principles of the dual system were put forward as a way to prepare students for

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<sup>1</sup>The contract and the training could last 6 months up to 3 years. The apprentice works part time in a company where he or she is supervised by a tutor. The rest of the time, he or she attends classes in a training centre for apprentices (CFA) during at least 400 h a year.

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a tense and demanding labour market. Therefore, since the 1980s, the system of alternation,<sup>2</sup> borrowed from the model of apprenticeship, has become widespread at every level of qualification, from secondary to higher education. It has become the traditional pathway to a professionally oriented education and towards a successful integration in the labour market. The alternation of periods in a workplace and periods in a training place is considered as the key feature of this system.

Most experts agree on the efficiency of alternation, particularly in initial training (Schuetze and Sweet 2003), to acquire competence and to integrate a community of work as community of practice (Lave and Wenger 1991). But, when it is an alternating training occurring during professional life on the occasion of an occupational conversion or a promotion, the question of experience assessment turns out to be acute.

The beginning of a second career raises the issue of skills acquired in comparison to those one should attain: it underlines the influence of previous learning and experience either as a potential obstacle or as an asset for the professional evolution. Thus, it is necessary to develop a new professional identity and a different habitus (Bourdieu 1990) to act within another community of practice. Consequently, gauging each one's experience implies the association of an instrumental function (to identify competence built up by each) with an identity dynamics.

The research presented in this chapter had been carried out during 2 years (2005–2006) at the request of a French civil service school: the National College for Education Management (ESEN).<sup>3</sup> This institution develops training programmes whose goal is to foster the professional advancement of Ministry of Education personnel beginning a second career.

The executives-to-be who are going to attend the training programmes have a very significant professional experience. Therefore, in order to assess the candidates' competencies, the school needed a method whose purpose is to enable the adjustment of the rate and the contents of alternation to the trainees' experiential learning and knowledge.

Our research focused on experience analysis and competence development in case of a professional change. It points out the question of adults attainment assessment before their entrance into a training programme based on alternation. It also raises the issue of the scientific construction of the notion of competence which currently represents an important matter in the VET system and more specifically, in the field of lifelong learning.

This chapter describes the development, by the authors, of a tool of competence diagnosis intended for the training of secondary cycle state school inspectors

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<sup>2</sup>The word alternation is used for different work contracts such as apprenticeship contract and professionalisation contract. It also covers compulsory internships necessary to obtain higher education qualifications at universities (bachelor's or master's degree) or at engineering and business schools.

<sup>3</sup>ESEN: École supérieure de l'Éducation Nationale. The role of this civil service school is to train administrative and pedagogical executives employed by the Ministry of Education. Every year, it hosts 4,000 to 5,000 trainees trained by permanent and associate trainers or outside contributors.

(Astier 2009a, b; Petit 2007). The goal of the tool is to adjust the content of alternation to trainees' experiential learning and knowledge at the beginning of their training. Since 2006, it has been used with roughly 150 laureates.

## Research Problem

In France, there is a growing concern about experiential learning and knowledge. In the fields of VET and adult education, competence assessment is currently a major problem and research topic confirmed by numerous studies of:

- Accreditation of prior and experiential learning (APEL)<sup>4</sup>
- The question of workplace learning analysis to prepare workers for job mobility
- The difficulty of transmitting expertise, best practice or informal knowledge to newcomers or apprentices

Presently, in many companies, experiments are carried out in order to find the best ways to answer to these issues (Olry and Parage 2008). The National College for Education Management request is a consequence of this concern.

The main duties of a secondary cycle school inspector<sup>5</sup> are the educational system assessment, the management, the communication, the promotion and the coordination of public policies. Those tasks require a specific training programme implemented by the National College for Education Management. The training lasts two years and focuses on culture and management missions. It consists of two parts: a hundred days are discontinuously spent at the ESEN and the rest in a local education authority where the trainee is appointed. During this alternation, the trainee oriented by a tutor holds an inspector's position on restricted fields and carries out usual tasks with the responsibility of records whose difficulties are calibrated. At the end of the second year, the Secretary of Education decides on the trainee's permanent staff status. He or she validates both the training and the permanent entrance in the body of inspectors. This particular stage relies on two reports which recount the work, the achievements and the assessment accomplished at the ESEN and in the local education authority.

The career of secondary cycle state school inspector<sup>6</sup> is open to National Education personnel according to prerequisites (degree, seniority, position) and after a competitive recruitment process. The candidates distinguish themselves thanks

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<sup>4</sup>Validation des acquis de l'expérience (VAE).

<sup>5</sup>The occupation of secondary cycle school inspector comprises different fields which establish a hierarchy, responsibilities and areas of intervention: there are local authority inspectors, local authority assistant inspectors, National Education inspectors in charge of general or technical education and National Education inspectors in charge of careers advising.

<sup>6</sup>For the 2009 promotion, the rate of women was 37%. It varies from 42 to 33% according to the field. There are 57% of women among secondary cycle school teachers ([www.esen.education.fr](http://www.esen.education.fr), accessed in May 2010).

to the variety of their education, their age (46 years old on average), as well as their professional experience within the institution (teacher, high school principal, pedagogical advisor . . .).

In 2004, the ESEN decided to change part of those executive training programmes, more specifically the stage of placement. Our research concentrated on this major point which establishes the rate and the contents of the alternation for each laureate.

Three questions guided this project: who are those executives-to-be? How does their experience influence their evolution? What should their training deal with? And two foremost statements led the research:

- The importance of taking into consideration each trainee's features in comparison to the secondary cycle state school inspector's main duties, in order to tailor his or her training
- The difficulty for the trainee to understand all the inspector activities just as well at school as in the local education authority

The civil service school request for change raises the matter of competence in job mobility and the means to assess what one has built up during his or her professional life.

## Methodology

As mentioned earlier, the research focused on the stage of placement which deals with the trainees' existing skills and knowledge. Usually during a placement, the trainees' initial situation is compared to the targeted occupation viewed as a collection of competencies required to practise it, or it is regarded in comparison with the training programme considered as a list of defined contents to attain.

Following numerous authors (Barbier 1994), we consider that the notion of assessment can be defined as a means to combine an activity of measure and an attribution of value by comparing a *referee* (competence of every trainee) to a *referent* (characteristic competencies of the position of inspector). Hence, the ability to comprehend the competence is essential. On that particular point, practices go from a methodological Charybde to Scylla; however, both are unsatisfactory.

On the one hand, one assumes that competence is attainable for an outside observation. He or she favours the dimension of measure and focuses on the trainee's performance thanks to tests built for this occasion. On the other hand, one assigns to the trainee a monopoly of access to relevant information and the consciousness of all the elements involved. He or she prefers a purpose based on the subject that relies on the trainee's words and account of his or her experience.

Our conception of activity makes us consider that understanding an action does not consist merely in the outside description of acts (Leplat 1997; Clot 1999). Besides, the notion of incorporated competence (Leplat 1997), pre-reflective dimension of action (Vermersch 1994) or even habitus (Bourdieu 1990) leads us to

refuse the premise of an individual lucidity. The methodological difficulty lies in the access to the subjects' competence without taking refuge in the speech dealing with the action of others or in a linguistic presentation of oneself.

The methodological issue has led us to reconsider our theoretical options and to rethink the matter of assessment in the fields related to the understanding of work and specifically of work experience. Because we consider along with Leplat (2001) that competence is an abstract and hypothetical notion, and it is by nature invisible – only one's performance is observable – the issue of how to assess becomes very delicate. That is why the theories of activity constitute our theoretical framework (Leontiev 1979; Vygotski 1986) and more specifically, professional didactics (Mayen et al. 2006; Pastré and Samurçay 2004; Vergnaud 1996).

Professional didactics appeared in the mid-1980s; it seeks to take into account key elements in competence development (action, tools, peers, work organisation, knowledge and experience) through work analysis in order to design appropriate training programmes. Its theoretical framework stems from the encounter of different fields: (1) adults training engineering; (2) cognitive and development psychology, especially Vergnaud's work<sup>7</sup>; and (3) the French tradition of ergonomics which had demonstrated that all operators use knowledge and make diagnosis while executing their tasks.

By articulating cognitive psychology, activity analysis and training engineering, this framework offers a specific approach on issues raised by competence assessment. Therefore, for professional didactics, competence is a subjective mobilisation of heterogeneous resources that differ from one person to another. It appears and then it consolidates itself through action. Specific to a work situation, a competence cannot exist irrespective of an activity. It could be characterised by a work analysis which highlights the internal organisation invariance of the actors' activity (Vergnaud 1996), regardless of action singularity and contingencies that are always different.

The concept of scheme<sup>8</sup> (Vergnaud 1996) and that of conceptual structure of a situation<sup>9</sup> (Pastré and Samurçay 2004) represent this cognitive organisation which contributes to the characterisation of competence.

Such definition requires the development of assessment situations including this cognitive organisation in a specific environment tolerating mistakes, hesitation and

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<sup>7</sup>This scholar argues that human activity is organised and that organisation is steady. Both organisation and steadiness allow worker to adapt to any kind of unforeseen event.

<sup>8</sup>A scheme '*is a functional dynamic totality. It is an invariant organization of behaviour for a given category of situations*' (Vergnaud 2006). Here, the organisation of activity is stable, which is not the case of the activity itself. Because of this steadiness, one can face a wide variety of situations and adapt him or herself to it. Gerard Vergnaud borrowed this concept of scheme from Jean Piaget and enhanced it with four elements: purposes and anticipations, rules of action, inferences in situation and operative invariants.

<sup>9</sup>A conceptual structure of a situation is the abstract core that one has to take into account so that his or her action may be relevant and effective. It consists of one or several essential dimensions of the situation, i.e. one or several concepts that one has to be able to estimate in order to diagnose the situation and to understand its present state and its potential evolution (Pastré and Samurçay 2004).

reflection. This gives the possibility to distance oneself from the speech on others action or from the linguistic presentation of oneself that one compares to a list of competences as an institutional representation of the occupation. In this theoretical option, the notion of situation is essential. A situation is structured by one's activity; it is also structuring because of its constraints (purpose, means, conditions, social relationships) with which one has to deal. Even if it is specific, it belongs to a larger category of situations with the same distinctive and organised features.

To respond to the National College for Education Management request and according to our theoretical options, we developed a tool according to a model that relies on three phases. Each of them uses a different method to gather data in order to assess competencies:

- The design of a *referent* founded on activity analysis
- The elaboration of a *referee* founded on experience analysis, followed by a confrontation between acquired competence and the *referent*
- The development of an *assessment situation* in order to estimate the trainee's skills and to provide a value

This model is what we called a tool of competence diagnosis. It focuses on gaps between different elements (Fig. 16.1). Measuring gaps is possible thanks to the confrontation of experience regarding the intended activity. This measure contributes to competence diagnosis by indicating for each trainee zones of training and development. The latter could be interpreted with the 'scaffolding' perspective: thus, the competence diagnosis process is the first stage of the ladder in the training programme. These zones could also be considered as the distance between understood competence (provided by the *referent*) and the trainees' active competence: hence, the competence diagnosis process tries to bring closer understood competence and active competence in order to tailor individual training programme.

## ***The Referent***

The *referent* development was made after the definition of five fields of professionalisation and seven significant situations of the inspector occupation. This allowed an activity analysis<sup>10</sup> based on the theoretical framework of professional didactics. The final synthesis of this analytical part drew elements and dynamics of every competence from each chosen situation: purposes of action, rules of action, indicators, reasoning and knowledge. A representation free from subjective and local variations had allowed characterising stable elements stemming from what was analysed.

The *referent* can be helpful for the training programme because significant situations can be useful as training situations since the competencies performed

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<sup>10</sup>After a training, around 40 associate trainers gathered data according to a protocol: observations and self-confrontation interviews on observation records of 50 inspectors.

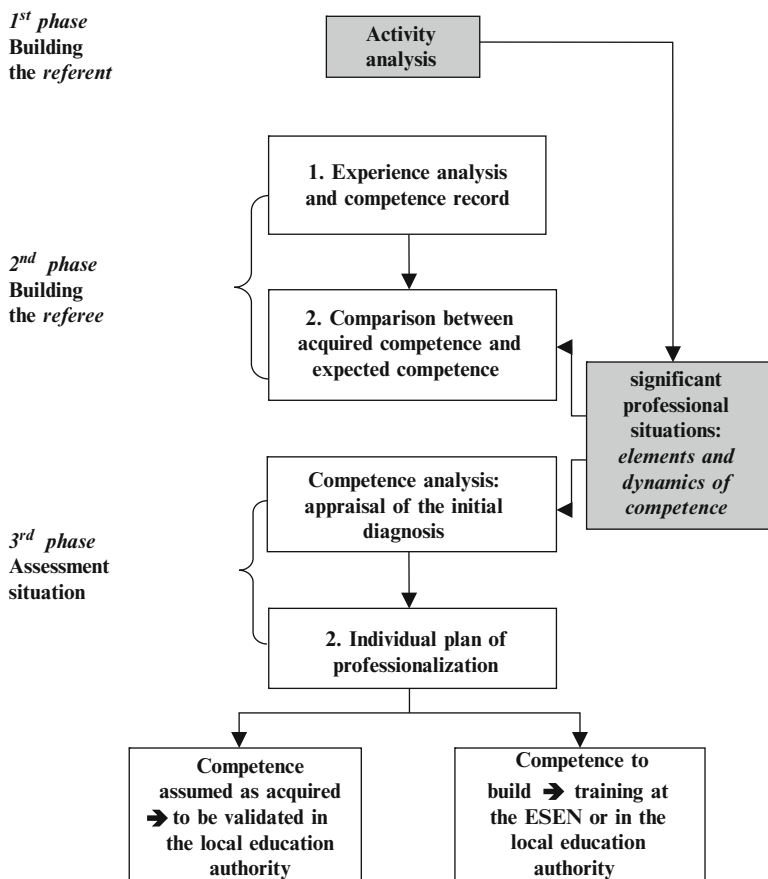


Fig. 16.1 Competence diagnosis

turn out to be necessary in numerous circumstances. Above all, it is a support for the diagnosis of competence given that it provides a representation of the job’s significant situations with elements and dynamics of competence to attain.

### The Referee

It has been developed from a biographical analysis. This section aims at distancing oneself in regard to the activity and working contexts as well as realising that he or she has attained the targeted competences. During the summer, every laureate writes about his or her work, as well as their social and training experience. Based on the diversity and the singularity of his or her experiences, the trainee examines what he or she has achieved: how and with which means.

The record from this experience analysis is confronted to the *referent*. This comparison determines whether the trainee has the necessary resources to act in the significant professional situations that the inspector may encounter. He or she needs to answer two main questions: does she or he have the necessary resources to act in the seven significant situations of the secondary public school inspector occupation? What is her or his degree of command?

A summary introduces a hypothetical degree of command by providing indicators and constitutes an initial diagnosis.

### ***The Assessment Situation***

The competence analysis from the *referee* constitutes the assessment situation. It takes place in mid-September<sup>11</sup> during an individual interview with an associate trainer.<sup>12</sup> The initial diagnosis is submitted to an analysis: it goes through a contradictory process to be assessed again based on both the *referent* and the associate trainer's specific experience, an inspector on duty. A link is established between experience, significant situations and working in a local education authority. This stage leads to a final diagnosis. Every trainee ratifies his or her own plan of professionalisation including matters of priority and modes of training.

### **Research Findings**

So far, no empirical research has been conducted on the effects of the implementation of this tool. However, we can underline some key points.

The relevance of establishing competence assessment on activity and experience must be understood by all the stakeholders. It prevents the trainee's self-censorship which could lead him or her to the development of a merely improved curriculum vitae; it should not entail the temptation of superficiality in the estimate of competence among associate trainers or to transform the tool of diagnosis into the prescription of 'one best way'.

The aim of the tool must be clear for the training programme actors: is its purpose pragmatic or epistemic? Should the assessment consider gaps to be an official report of competence or should it be a zone of development (Vygotski 1986)? Both opinions do not exclude themselves and are complementary. However, it is necessary to make the difference between them in order not to lose the interest in the act of assessment.

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<sup>11</sup>Trainees are already on duty. The first promotion meeting takes place at the beginning of July, and after 6 weeks of vacation, trainees are appointed to a local education authority.

<sup>12</sup>Associate trainers are inspectors on duty appointed at the National College for Education Management for 3 years in order to achieve training assignments.

For trainees, the suggested tasks could raise difficulties as far as identity is concerned but also from a cognitive standpoint. Those tasks stir up the inherent anxiety in career change and underline the impossibility of recounting experience through the speech. This is not insignificant in the delicate phase of both beginning a training programme and taking a position – as Bourdieu (1990) put it – in a new occupational field.

The articulation of identity dynamics and cognitive ones, operating at the level of the implementation of the programme and beginning with the use of the tool of diagnosis, seems essential to us. In this process, trainees have to reconsider their knowledge, experience, competence and their professional identity (place and posture). The latter has to be left behind in order to put on a new one with new competencies to attain, which is not easy to undertake.

## Conclusions for VET Research and Practice

Our research and tool development deal with the clarification of experience dynamics at a specific moment of job mobility.

As described above, this elucidation relies both on subjective standpoints (trainees and trainers experience) and on some objective elements of the secondary public school inspector activity. Retrospection (experience analysis), anticipation (seeing oneself acting in the future activity) and establishment of pattern (activity analysis summary) are at stake. By confronting the experience and the intended activity, not only does competence come into play but also identity dynamics.

The chosen methodology for competence diagnosis based on both experience and activity analysis sheds light on two shortcomings: the time necessary to implement it and the potential misunderstanding of the process by the actors.

In our view, the assessment tool allows an operational approach to help individuals describe by themselves their competencies. It is a helpful method to design open training programmes close to the reality and not just based on an institution's representation of what is the professional activity.

The issue of experience in VET and lifelong learning is a complex one. The tool of competence diagnosis we developed is a means among others to seize part of this complexity.

## References

- Astier, P. (2009a). Travail et formation. In J.-M. Barbier, E. Bourgeois, G. Chapelle, & J.-C. Ruano-Borbalan (Dir.). *Encyclopédie de la formation*. Paris: PUF.
- Astier, P. (2009b). L'expérience, s'en sortir et en parler. *Éducation Permanente*, 180, 176–185.
- Barbier, J.-M. (1994). *L'évaluation en formation*. Paris: PUF.
- Bourdieu, P. (1981/1990). *The logic of practice*. Cambridge: Polity Press.
- Clot, Y. (1999). *La fonction psychologique du travail*. Paris: PUF.

- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.
- Leontiev, A. N. (1979). *Activity, consciousness, and personality*. London: Prentice Hall.
- Leplat, J. (1997). *Regard sur l'activité en situation de travail*. Paris: PUF.
- Leplat, J. (2001). Compétence et ergonomie. In J. Leplat & M. de Montmollin (Eds.), *Les compétences en ergonomie* (pp. 41–53). Toulouse: Octarès.
- Mayen, P., Pastré, P. & Vergnaud, G. (2006). *Note de synthèse: La didactique professionnelle* (Revue française de pédagogie, 154, pp. 145–198). Lyon: INRP.
- Olry, P., & Parage, P. (Eds.). (2008). *Travail et formation: Quelques pratiques en émergence*. Arcueil: Éducation Permanente. 174.
- Pastré, P., & Samurçay, R. (2004). *Recherches en didactique professionnelle*. Toulouse: Octarès.
- Petit, L. (2007). Fonction structurante de la discontinuité dans l'alternance. *Éducation Permanente*, 172, 89–97.
- Schuetze, H. G., & Sweet, R. (Eds.). (2003). *Integrating school and workplace learning in Canada: Principles and practices of alternation education and training*. Montréal: McGill-Queens University Press.
- Vergnaud, G. (1996). Au fond de l'action, la conceptualisation. In J.-M. Barbier (Ed.), *Savoirs théoriques et savoirs d'action* (pp. 275–292). Paris: PUF.
- Vermersch, P. (1994). *L'entretien d'explicitation*. Paris: ESF.
- Vygostki, L. S. (1937/1986). *Thought and language*. Cambridge: MIT Press.

**Part III**  
**Towards an Open TVET Architecture:**  
**Why European and National Qualification**  
**Frameworks Do Not Suffice**

# Chapter 17

## Differences in the Organisation of Apprenticeship in Europe: Findings of a Comparative Evaluation Study

Felix Rauner and Wolfgang Wittig

### Introduction

On the basis of a theoretical framework for the evaluation of the governance and support systems, quantitative and qualitative assessment of the VET systems was carried out by national experts in 2008. This international comparative study initiated by the Bertelsmann Stiftung brought to light the prevailing differences in the dual VET systems of four European countries and led to various recommendations among others to modernise occupational profiles towards open European core occupations (cf. Bertelsmann Stiftung 2009).

In international comparative vocational education and training research, the countries with a well-developed dual system of vocational education (apprenticeship system) are typically grouped as *one* type of vocational education. The differences that actually exist between the dual VET systems of Austria, Denmark, Germany and Switzerland often escape attention. One indicator for the variety of the systems is the transition rate from the school into vocational education.

The topic of this chapter is a comparison and evaluation of the dual systems of vocational education and training in Austria, Denmark, Germany and Switzerland with a view to identifying strengths and weaknesses. This comparison is based on

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country studies and a combined qualitative-quantitative evaluation tool for expert workshops. The study was carried out with the aim to assess the performance of the German VET system in an international perspective with a particular emphasis on the optimisation of administrative structures. It is these governance and support structures that have a crucial influence on the quality of VET systems.

Dual vocational education and training is often perceived as a particularity of the German education system. It is a feature that is rooted in the German industrial culture and contributes to the competitiveness of the national economy. At the same time, this alleged particularity seems to be the reason for the relatively low acceptance of dual apprenticeship training in the international context. This, however, is a misconception which is based on a somewhat fuzzy terminology in the discourse on vocational education and training.

The acquisition of vocational competence (professionalism) requires reflected working experience, which is the crucial point of vocational learning and development processes. Professional working experience alone is insufficient, as is the impartation of subject-specific theoretical knowledge. Therefore, the *combination* of professional working experience and the acquisition of related theoretical knowledge is fundamental for vocational education and training. This means that each occupation, be it mathematician, medical doctor or bank clerk, must ultimately be learned on the job as well. The dual organisation of vocational education and training is therefore no special type of vocational education but its constitutive feature.

Two types of dual vocational education and training can be distinguished: (1) the one-phase or integrated duality and (2) the two-phase or alternating duality. Higher vocational education at universities is typically organised according to the two-phase model. A study programme relevant for the chosen occupation is followed, after graduation, by a phase of practical training on the job, e.g. by means of a preparatory service. In nonacademic VET, the two models compete with each other.

Given a differentiated understanding of duality, one can observe that dual vocational education and training is by no means a German specialty but the genuine form of vocational education and training, which is established in any place where prospective skilled workers are qualified for their tasks. The dual organisation of vocational education for nonacademic occupations presupposes a plural administration, the quality of which varies considerably from country to country.

## Research Problem

In vocational education and training, three ideal types of regulation and governance (cf. Benz et al. 2007) are usually distinguished on the basis of the roles of the agents and the underlying rationale of agency. The dominant influence may come either from the state, the market or professional groups. On the basis of the categories of social regulation that have been commonplace in sociology since the time of Max Weber – tradition, market and bureaucratic rationality – the prevalent typology

in the social sciences distinguishes three models of governance, which can be termed market-driven, state-controlled and occupation-driven or corporatist VET governance (see Greinert 1998, 19–22; Clematide et al. 2005, 3–4).

The market-driven model of VET governance is characterised by the immediate control of vocational qualification by the employment system and the demand on the labour market. Vocational qualification is oriented towards the requirements of employers and takes place on the job and in a private sector of training providers offering job-related learning modules. The responsibility for the training process rests with the learners, who are expected to acquire the qualifications required by employers on their own. Typical examples of this model are the United States, the UK and Japan, where the relative absence of a regulated VET system is associated with a large number of students attending upper secondary schools and higher education.

The state-controlled model of VET is characterised by a dominance of school-based vocational education, which is subject to a relatively tight regulation by state authorities. In this model, which is prevalent, for instance, in France or China, the regulation is based on the school's logic of action and includes a focus on civic education. Enterprises do not have an institutionalised role in this system but serve as suppliers of internships while all regulatory functions – planning, management and control – are concentrated in the public sector. The contents of vocational education are typically based on theoretical and academic types of education (cf. Greinert 1998, 21–22). Due to the integration into the state-controlled education system, there is a relatively close connection to general education. Moreover, the supply of training opportunities is independent of the provision of training places by private companies. The major difficulty of this system is the weak linkage to the labour market (cf. Clematide et al. 2005, 3).

The third model is usually referred to as traditional occupation-based or corporatist regulation (cf. Greinert 1998, 19–20). Historically, this model is derived from the apprenticeship tradition in the craft trades. It is characterised by a strong influence of the training companies and the chambers (i.e. the corporate bodies or associations that represent the business community at the local or regional level). This concerns the access to training as well as the definition of training contents and the responsibility for examinations. Today occupation-based regulation is part of 'mixed' systems of cooperative governance in which the regulation of vocational education takes place in a plural network of state bodies, enterprises or employers' associations as well as trade unions or professional associations. Variations of these mixed models of regulations can be found in systems of cooperative (dual or alternating) VET as they exist in Austria, Denmark, Germany and Switzerland. In what follows, it will be discussed how the systems of dual or alternating apprenticeship training in Austria, Denmark, Germany and Switzerland can be characterised and situated with regard to their governance structures and how this affects the performance of the systems. The epistemic interest is to identify examples of good practice in plural administration that can serve as a basis for policy recommendations.

## Methodology

Plural governance systems in which state-controlled and market-driven or corporatist types of governance overlap can be classified on the basis of two dimensions of the governance process. *The first dimension* is the degree of coordination between the different agents with their respective internal logic or, to put it differently, the *integration of the system*. At one end of the scale, the ‘plural administration’ may be completely fragmented. In this case, the public and private or corporative agents act autonomously within the legal framework and follow their own internal logic of agency without coordinating their activities. The responsibilities are not allocated according to functions of rule-making; execution and monitoring are dispersed across all types of bodies in varying constellations.

The *second dimension* distinguishes between an *input-oriented* type of management by rules and resources and an *output-oriented* management by means of the products and services to be achieved by the management process (cf. Jann 2001; Stöbe-Blossey 2001). Input control is typical of the traditional bureaucratic model of public administration, which is primarily concerned with the implementation of the law. Output control, on the other hand, is one of the cornerstones of the new public management approach, which claims to improve the efficiency of the public sector by means of management techniques adapted from the private business sector (cf. Osborne and Gaebler 1993; Spicer 2004).

These two dimensions allow for the construction of a coordinate system whose four quadrants represent the different types of plural corporatist governance system in vocational education and training. In the case of a *fragmented input control*, the management processes follow the paradigm of the implementation of norms as expressed in the principle of the rule of law. The responsibilities are dispersed among different institutions or subsystems of the political system. The distinctive feature of fragmentation is that competences are allocated according to policy areas and that a vertical integration takes place at best within these areas. The result is that the institutions operate relatively independently of each other and have few incentives to coordinate their actions. A *coordinated input control*, on the contrary, is also characterised by a primacy of rules, but intuitional arrangements such as the concentration of legislative powers and a consistent responsibility of government departments allow for a coordination of the bodies involved. Coordinated input control therefore features a more systematic structure of the legal framework and a consistent and coordinated implementation of the rules. The third model is *fragmented output control*, which combines a highly decentralised set of administrative bodies with a management by objectives. As this type of management automatically entails a relatively high autonomy on the part of institutions, the integration of the system as a whole can be secured only by means of a coordinated or centralised definition of the objectives in question. Accordingly the fourth model, which can be termed *coordinated output control*, aims to secure the integration of the system by coherent objectives, which are formulated by a central body or developed jointly by the bodies involved. The following table summarises this conceptual framework (Table 17.1).

**Table 17.1** Types of governance in vocational education and training

Rationale of agency	Integration of the system	
	Low	High
Output	Fragmented output control	Coordinated output control
Input	Fragmented input control	Coordinated input control

The classification of existing VET systems according to the taxonomy described above allows for the development of policy recommendations if a type of governance can be identified that can reasonably be considered the optimum for dual or alternating vocational education and training. This model is operationalised by an evaluation tool with several indicators that are listed below. In addition to desk research carried out on the basis of the theoretical framework, the set of criteria opens the opportunity to carry out expert interviews with a view to situating the different VET systems within the coordinate system described above. There are seven main criteria, of which five relate to the integration of the system (i.e. coordination and fragmentation) and two to the dimension of input and output orientation. These main criteria are the following:

- Dimension 1: Integration of the system
  - Category 1: Consistent legal framework
  - Category 2: Cooperation of the various bodies
  - Category 3: Innovation strategies
  - Category 4: Balance of relevant policy areas
  - Category 5: Allocation of strategic and operational functions
- Dimension 2: Input and output orientation
  - Category 6: Outcome orientation
  - Category 7: Input orientation

These criteria are operationalised by approximately 30 subcriteria or items that are evaluated and discussed by experts in the course of evaluation workshops. Respondents are asked to judge the items on a scale from 1 (= not realised) to 10 (= fully realised). The aggregated answers determine the position of the VET system within the matrix described above. The position on the horizontal axis 'integration of the system' is defined by the mean of the values for the main criteria 1–5 with increasing numerical values indicating a higher degree of coordination. As regards the second dimension, the value is calculated on the basis of the mean of the two remaining main criteria 6 and 7. Given that the two main criteria have a reciprocal relationship so that a system is situated halfway between the poles of input and output control if the two criteria are equally realised, the values are standardised before the mean is calculated. Therefore, the value for the position on the vertical axis is calculated according to the following formula:

$$\frac{n_{\text{Outcome}} + 11 - n_{\text{Input}}}{2}$$

The value expresses which of the two modes of governance has a stronger influence on the VET system in question. The evaluation tool was applied in four expert workshops in Berlin, Copenhagen, Vienna and Zurich in November 2007.

### Research Findings

Four key results of the study that are relevant for the quality of the dual organisation of vocational education and training will be presented in this contribution.

### *Differences in the Plural Governance of Dual VET Systems*

When a distinction between input and output-oriented governance as well as between coordinated and fragmented governance is applied in the evaluation of VET management, what becomes clear is that Germany is the only among the four countries to have a fragmented input-oriented governance system in VET. The fragmentation of the governance and support system is relatively strong. The prerequisites for the coordination of the relevant actors and institutions are absent. In the first place, this is a structural weakness of the German VET system. The problem is intensified by an input-oriented mode of governance that lays emphasis on formal rules and their implementation, which considerably limits the opportunities for the autonomous design and organisation of VET at the local level (Fig. 17.1).

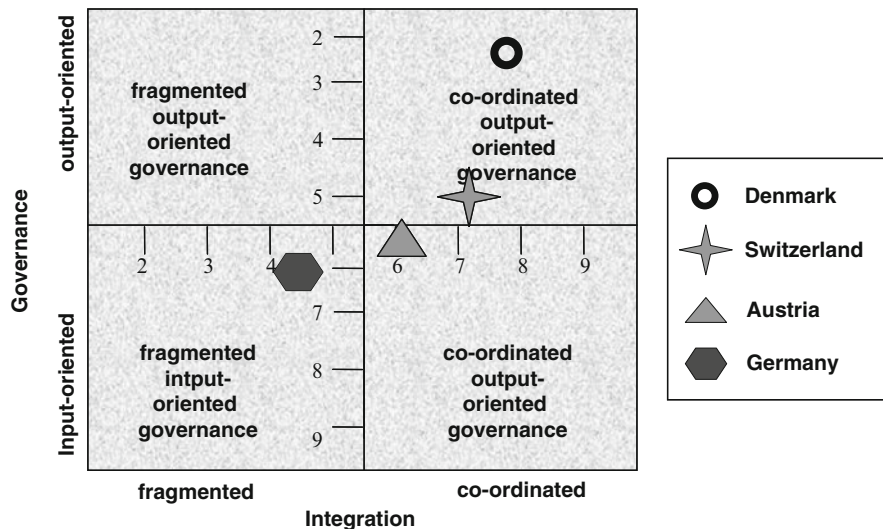
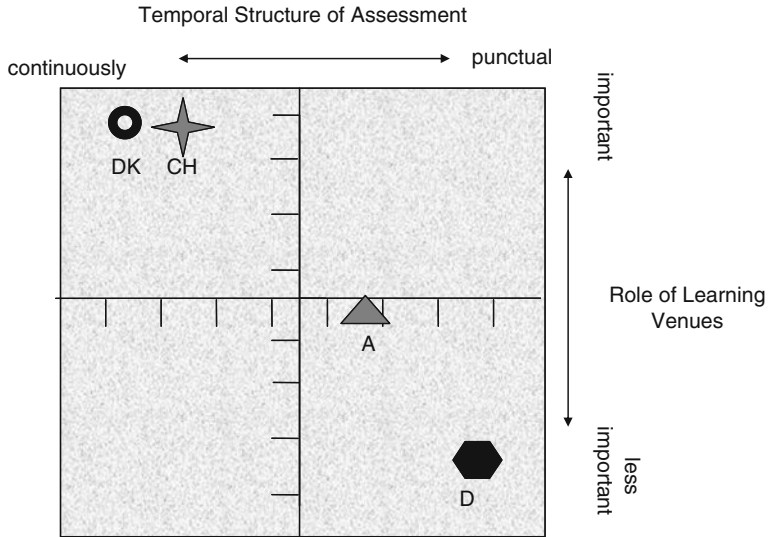


Fig. 17.1 Governance of dual VET systems in Austria, Denmark, Germany and Switzerland (cumulative results)





**Fig. 17.3** Assessment systems (temporal structure and role of learning venues) in comparison

### *Different Assessment Systems and Their Effects*

The system of single, isolated examinations in the shape of an intermediate and a final examination leads to a persistent weakening of the trainees' competence development.

In Denmark and Switzerland, the continuous evaluation of dual training programmes is highly developed. The vocational schools in Denmark even assume a managerial and coordinating function. Above all, the Danish and Swiss examination systems avoid a reduction of the assessment to one or two single examination dates.

This reduction of the performance assessment or the evaluation of professional competence development is a considerable structural problem for the organisation and design of vocational learning processes. Especially in the interval between the intermediate and the final examination, systematic feedback on the development of professional competence is missing. A crucial element of competence development is thus absent (Fig. 17.3).

### *Differences in the Dual Organisation of Vocational Training*

The underdeveloped cooperation between the learning venues is one of the Achilles' heels in the German dual VET system. Due to the fact that the learning venues 'company' and 'school' belong to different legal spheres, the vocational school has become the junior partner in vocational education (Fig. 17.4).

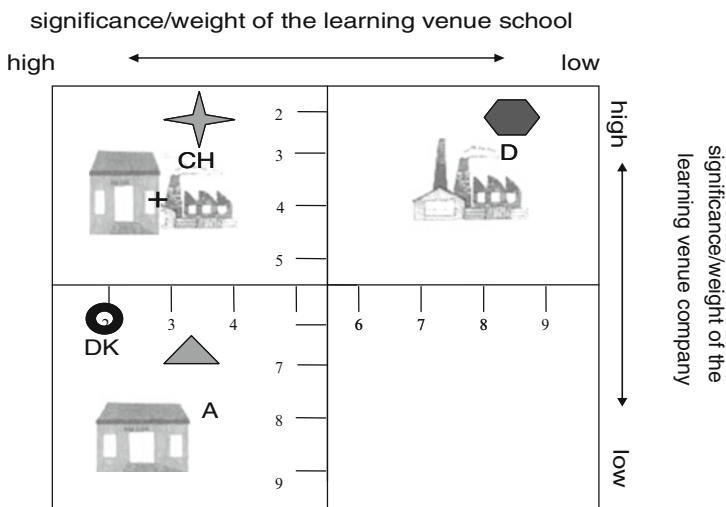


Fig. 17.4 Structure and organisation of VET in Austria, Denmark, Germany and Switzerland

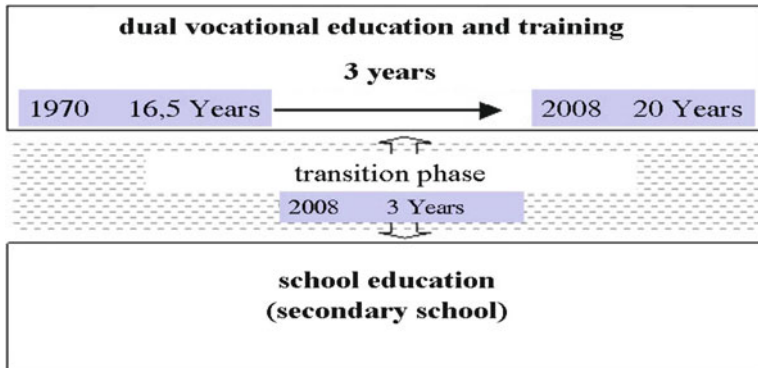
In Denmark and Switzerland, the cooperation of learning venues is based on a single legal framework and an advanced coordination and support structure at the national, regional and local levels.

To this date, the negative effects of the underdeveloped cooperation of learning venues in Germany for the trainees’ achievements have been underestimated. This is shown by a survey of 1,600 trainees. Two-thirds of the apprentices rated the cooperation and coordination between company-based training and school instruction as ‘little effective’ or ‘not effective’.

***Impeded Transition from School to Vocational Education (First Threshold) in Germany***

The average age of VET trainees in Germany is considerably higher than in the other countries with a dual VET system. The reason is that for some decades, the transition from school to vocational education has been rendered difficult by various obstacles. The neighbouring countries give examples of how a well-functioning transition from school to vocational education can be organised (Fig. 17.5).

The positioning of the four countries shows that in Germany, the fragmentations of governance are particularly strong while in Denmark and in Switzerland, there is a remarkable degree of coordination. With a score of 7.8 on the axis ‘integration’ and 2.8 on the ‘input/output’ axis, Denmark exemplifies the type of coordinated output control. For Germany (4.4; 6.3), the analysis shows a weak coordination and a clear dominance of input orientation. Austria (6.0; 5.4) shows a stronger but still relatively weak coordination and a balanced ratio of input and output control. In



**Fig. 17.5** The impeded transition from school to vocational education in Germany

Switzerland (7.0; 5.1), the coordination is already very strong and almost reaches the Danish figure. In addition, there is an almost equal distribution of input and output control, which suggests that the Swiss VET system comes closest to the ideal model of governance as discussed in the previous section.

It has to be emphasised also in the light of the previous desk research that Switzerland with its pronounced federalism and language pluralism has a well-developed and coordinated system of dual vocational education and training. The competences are allocated to the national, regional and local levels so as to ensure a good equilibrium of strategic and operational functions according to the principle of subsidiarity. The new Vocational Training Act that came into force in 2005 enacted a fundamental reform of the VET system, following a constitutional amendment in 1999 that concentrated the legislative power for the entire system of vocational education and training (except higher education) at the federal level (cf. Article 63 of the Swiss Constitution). The Swiss Federal Institute for Vocational Education and Technology (BBT) became the central institution for the coordination of the VET system. At the same time, all stakeholders in vocational education contribute to the development in VET in accordance with the principle of subsidiarity.

After the reforms of the past decade, Denmark can be regarded as an example of coordinated output-oriented governance. This is illustrated by the fact that the political responsibility is concentrated in one body. It is exclusively with the Ministry of Education, which also ensures the coordination of general and vocational education (see Cort 2005, 13–16). The ministry guarantees that VET programmes comply with the guidelines of education policy. The ministry also supervises the vocational colleges that offer basic and mainstream courses in vocational education and training. All strategic functions like the development of occupational profiles or the recognition of qualifications are located at the national level as an institutionalised cooperation of all stakeholders. This dialogue includes the Council on Initial Vocational Training as the main advisory body as well as 12 trade committees that collaborate in the preparation of framework curricula. At the

local level, on the contrary, all operational functions are located, which include also the development of concrete school and training curricula as well as the outline of individual training plans. The main actors at this level are the vocational colleges, the training enterprises and the local VET committees (cf. Cort 2005, 16–18).

The colleges are independent public institutions with their own budgets and a performance-based funding scheme, which have the power to develop their own curricula and training plans within the national framework.

To some extent, the German system can be regarded as the opposite model to the Danish system. A long tradition of decentralisation has led to a strongly fragmented governance system, as is already shown by the separation of the legislative powers for the two branches of vocational education and training. While the school part of dual apprenticeship training and the school-based VET programmes are under the responsibility of the states (*Länder*), the federal government is responsible for in-company training within dual VET. Finally, the domain of continuing vocational education and training is characterised by an uncoordinated variety of both federal and state regulations.

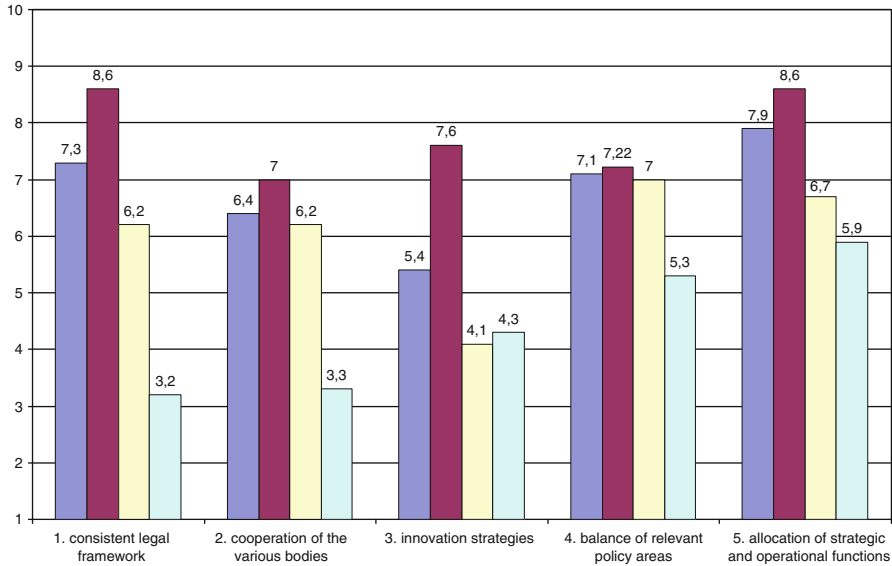
A distinctive feature of the German system is therefore the distribution of virtually identical functions across different levels of government. In addition, there is a heterogeneous involvement of government departments as the ministries of education are responsible for vocational education while the supervision of in-company training is in most cases a task of the ministries of economics or labour.

Like Germany and Switzerland, Austria is characterised by strongly developed federal structures. However, contrary to Germany, the responsibility for educational policy is concentrated at the federal level, and this applies also to vocational education. This allows for a better coordination of the system than in Germany. The implementation of VET is regulated at the state level, and the Federal Ministry of Education is the supervisory body for the entire education system. In recent years, a number of reforms were implemented that followed the modern principles of deregulation and decentralisation, but the dominant paradigm is still juridical and bureaucratic.

The following chart summarises the means of the experts' assessments given in the evaluation workshops of the main criteria described above. As explained before, the participants evaluated the status quo in their countries for each item on a scale from 1 (not realised) to 10 (fully realised) (Fig. 17.6).

## Conclusions

This chapter has provided an overview of a theoretical framework by means of which several types of plural governance in dual or alternating vocational education and training can be identified. In addition to this classification scheme, the public value approach was discussed as a yardstick for evaluating the performance of existing VET systems on the basis of their position within the coordinate system. It was argued that the theoretical optimum for governance in dual systems of



**Fig. 17.6** Summary of results (means) of the expert evaluation on governance in dual vocational education in Austria, Denmark, Germany and Switzerland (integration of the system)

vocational education and training was a type that combined a high degree of coordination between the bodies involved with a balanced ratio of input and output control, i.e. of management by rules and management by objectives.

The case studies and evaluation workshops in which this methodology was applied for the study of the dual training systems of Austria, Denmark, Germany and Switzerland came to the conclusion that the Swiss model most closely approached to the ideal model. One of the strengths of the Swiss system that were identified is the consistent legal framework for vocational education and training at the national level, which lays the foundations for an integrated governance system. This is complemented by the concentration of the supervisory functions in one national authority. The Federal Institute for Vocational Education and Technology serves as a link between the national government and the actors at the regional level. This centralisation of strategic functions also allows for a balance between the relevant policy areas, as is expressed by the high score of Switzerland for this item in the evaluation workshops. As regards the allocation of strategic and operative functions, the results suggest that the high autonomy of local bodies concerning the implementation of vocational training represents an advantage of the Danish and Swiss systems.

The following recommendations can be derived from this study:

1. Modernisation of occupational profiles: open European core occupations and the relocation of the specification of occupational profiles by means of syllabi to the local level.

2. This requires a new division of tasks in the management of vocational education according to the principle of subsidiarity: a strengthening and concentration of strategic competences at the national level and of the operative management tasks at the regional and local levels.
3. The dual organisation of vocational education, more specifically the cooperation of learning venues, needs a consistent legal framework. The vocational school must play a responsible part in vocational education.
4. This requires the establishment of an evaluation and feedback scheme in the shape of an assessment along the training process (extended examination) throughout the entire training period.
5. Establishment of a 'VET innovation system' in which VET practice, VET policy and VET research mutually support each other.

## References

- Benz, A., Lütz, S., Schimank, U., & Simonis, G. (Eds.). (2007). *Handbuch Governance. Theoretische Grundlagen und empirische Anwendungsfelder*. Wiesbaden: VS Verlag für Sozialwissenschaften.
- Bertelsmann Stiftung (Ed.). (2009). *Steuerung der beruflichen Bildung im internationalen Vergleich*. Gütersloh: Verlag Bertelsmann Stiftung.
- Clematide, B., Dahl, A., Vind, A., & Joergensen, C. H. (2005). Challenges for the Danish VET-system – On the path towards a new future model. *Berufs- und Wirtschaftspädagogik online*, 7. [http://www.bwpat.de/7eu/clematide\\_et al.dk\\_bwpat7.pdf](http://www.bwpat.de/7eu/clematide_et al.dk_bwpat7.pdf). Accessed 12 Apr 2007.
- Cort, P. (2005). *The Danish vocational education and training system*. Resource document. Danish Ministry of Education, Department for Vocational Education and Training. <http://pub.uvm.dk/2005/VET/87-603-2524-0.pdf>. Accessed 11 Apr 2007.
- Greinert, W.-D. (1998). *Das 'deutsche' System der Berufsausbildung. Tradition, Organisation, Funktion* (3rd ed.). Baden-Baden: Nomos.
- Jann, W. (2001). Neues Steuerungsmodell. In Blanke, B., Bandemer, S., Nullmeier, F. & Wewer, G. (Eds.). *Handbuch zur Verwaltungsreform*. 2nd ed. Opladen: Leske + Budrich, pp. 82–92.
- Osborne, D., & Gaebler, T. (1993). *Reinventing government: How the entrepreneurial spirit is transforming the public sector*. New York: Plume.
- Spicer, M. (2004). Public Administration, the history of ideas, and the reinventing government movement. *Public Administration Review*, 64(3), 353–362.
- Stöbe-Blossey, S. (2001). Output-Steuerung des Verwaltungshandelns. In Blanke, B., Bandemer, S., Nullmeier, F. & Wewer, G. (Eds.). *Handbuch zur Verwaltungsreform*. 2nd ed. Opladen: Leske + Budrich, pp. 367–376.

# Chapter 18

## Implementing the EQF: English as Distinct from Continental Bricklaying Qualifications

Michaela Brockmann, Linda Clarke, and Christopher Winch

### Introduction

Potential difficulties in the implementation of the European Qualification Framework (EQF) are apparent at both sectoral and occupational levels, for example, within the construction sector for the recognition of bricklaying qualifications. The EQF is based on the open method of coordination, involving joint identification and definition of objectives to be achieved, establishing measuring instruments and benchmarking (EC 2009). Its success may depend on the development of cross-national, cross-sectoral and cross-occupational zones of mutual trust (ZMTs), establishing arrangements for recognising equivalences in terms of mutual knowledge and methods of working (Coles and Oates 2004). This chapter focuses in particular on disparities between the English and continental systems such as the German, in order to try to identify some of the difficulties with which implementation of the EQF will be confronted. Three issues arise in the case of bricklaying: the scope of the occupation, the level of the qualification within the hierarchical structure of EQF and the institutional structure of vocational education and training (VET), notably the stakeholders involved. This chapter first describes the EQF framework, before exploring each of these issues, in relation to the English and continental models.

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## The EQF Framework

### *EQF: Policy Context and Key Features*

The EQF is a ‘translation device’ whose aim is to enable an accurate comparison to be made of any qualification of a particular type in one country with one of the same apparent type available in another country. Thus, an employer wishing to determine the standing of a qualification presented by a prospective employee from another country, or an employee wishing to gauge the value of his or her qualification in a country to which he or she has moved, should be able to use EQF for such purposes. It is intended to provide a comprehensive framework which covers both vocational and general education, making no attempt to distinguish between the two, as well as higher education. In covering higher education, it could be said to follow on from the Bologna process which set out a common framework for bachelor’s, master’s and doctoral degrees. In this respect, the EQF is in harmony with a growing tendency for the European Union (EU) countries to develop vocational higher education and is also in line with the European policy of bringing about parity of esteem between general and vocational education. It is thereby fully engaged with the European policy of lifelong vocational and professional education, covering without distinction qualifications in both initial and continuing education. At the same time, the EQF can be regarded as radical in the sense that it is designed to incorporate accredited learning which may have taken place outside an educational setting, through basing qualification classifications solely on learning outcomes, rather than curricula, pedagogic processes or time spent on studying.

Previous EU attempts to construct a common comparator for qualifications floundered as the complexity of gathering and comparing inputs rendered such an exercise extremely difficult. The solution was to abandon inputs and to concentrate on outputs, thus ignoring such factors as number of years of study and number of hours per year of study in determining the academic level and the value of the qualification. However, the interpretation of ‘learning outcomes’ is very particular and builds on English developments in vocational education from the 1980s onwards, most notably the outcome-based National Vocational Qualification (NVQ) system which relies heavily on formal accreditation of practical and workplace experience. The EQF together with modularisation, accreditation of prior experiential learning and the promotion of ‘learning how to learn’ can be seen as part of a long-term movement towards the empowerment of labour market institutions at the expense of educational ones (Young 2009). In this sense, EQF is part of a larger enterprise of reconstructing national labour markets and creating a European labour market which can, to a considerable degree, operate in an autonomous way. As a secondary objective, it can be seen as a move to undermine the power of individual countries in controlling their own qualification systems by promoting student and learner mobility throughout Europe. The key design features on which the EQF is based are:

- The classification of learning outcomes, whether or not these are achieved by a formal educational process
- ‘Vertical’ organisation in a hierarchy of eight levels, ranging from 1. (low) to 8. (doctoral level).
- ‘Horizontal’ organisation in three columns representing declarative knowledge, practical knowledge and autonomy/responsibility, respectively
- The level at which a learning outcome is placed to reflect sub-outcomes in declarative knowledge, practical knowledge and autonomy/responsibility

### ***Potential Difficulties in Establishing ZMTs***

The importance of ZMTs resides in the fact that, in order for the EQF to work, it is necessary for countries, industries or occupations wishing to engage with it to trust the integrity of the way in which their qualifications are referenced with the EQF. This can happen in a variety of ways, for example, through the possession of similar VET systems, through EU regulation of an occupation or an industry or through extensive and established cross-national operations within an industry. In order for the EQF to work within labour markets, mutual trust must exist between employers and employees in the different countries. In turn, it is necessary that there be official agreement by individual countries on what the relationship between that country’s qualifications and the EQF classification should be. This process is known as ‘referencing’ a national qualification with the EQF, an exercise that at the time of writing is taking place throughout the EU. Without this, it is difficult to see how any employer could have confidence that a match of a national qualification within the EQF is valid.

On the other hand, it does not follow that employers or trade unions will automatically have confidence in the referencing that a country gives for qualifications within the EQF framework, particularly if they suspect that the exercise was influenced by political or special interest considerations. In addition, it is likely that sectoral agreements on the use of the EQF, for example, in construction, will need to have access to a full range of detail concerning the curricula and learning outcomes of qualifications in different countries in order that meaningful comparisons can be made. The reason for this is that the EQF does not deal with what might be termed the ‘scope’ of an occupational qualification or, in other words, the range of activities that it guarantees the holder is able to carry out. This is an important issue for bricklaying as its scope varies enormously between different countries, ranging from a narrow confinement to laying bricks in, for example, England, to a whole range of construction activities in, for example, Poland. It is of obvious interest to employers and trade unions to know whether or not prospective employees have an occupational qualification of broad or narrow scope, and it is a worrying feature of the EQF that it is not designed to make determinations of that kind. Similar difficulties are likely to arise in relation to many qualifications, although patterns of similarities and differences vary, with a greater scope for

establishing ZMTs in relation to certain qualifications in higher education compared to traditional vocational ones (Brockmann et al. 2011). Bricklaying is a fitting example for the present discussion, as it constitutes an important area of activity in a large sector – the construction industry – with considerable labour market mobility across Europe. The research, in focusing on bricklaying, has highlighted some of the difficulties likely to arise in implementing the framework in relation to vocational qualifications at skilled operative level – that is between levels 2 and 4 of the framework. It addresses above all one key question: Is it possible to describe occupational qualifications only in terms of vertical levels, without also consideration of the scope of activities encompassed? Having identified the critical significance of occupational capacity or scope to describing differences in bricklaying qualifications, the second question addressed is how far is change evident, in particular in the contrasting English case, opening up the possibility for establishing a ZMT?

## **Methods and Research Design**

This chapter draws on data from two projects: first, the Nuffield study ‘Cross-national equivalence of vocational qualifications and skills’, which examined differences in understandings of key concepts underpinning VET systems in Europe (Brockmann et al. 2011). This was based on case studies of four occupations (bricklaying, lorry driving, nursing and software engineering) in four countries (Germany, France, the Netherlands, and England). Second, the Leonardo-da-Vinci study ‘Bricklaying qualifications, work and VET in Europe’ which seeks to examine bricklaying qualifications in the same four countries and a further four – Belgium, Denmark, Italy and Poland. Both research projects involved documentary and statistical evidence as well as a range of semi-structured interviews with key stakeholders at macro- and micro-levels.

## **Divergent Bricklaying Qualifications**

### ***Scope of the Occupation***

The breadth or scope of activities of the occupational qualification is a dimension not addressed directly by the EQF but one of critical importance to the development of mutual trust and to implementation. There is considerable variation between bricklaying qualifications in Europe in terms of the range of activities bricklayers are expected to carry out. This poses a problem for their comparability and transferability, particularly as qualifications are associated with and embedded in distinct education and labour market systems and as a result embody and denote

different understandings of occupations or trades (Brown et al. 2001). The research has discovered very different bricklayers, representing not just higher or lower levels of ability and competence but also covering a very different range of activities.

In many continental countries (in the study: Belgium, Denmark, Germany and the Netherlands), nationally recognised qualifications are incorporated within a wider sectoral and occupational framework, based on broad occupational competence and awarded on completion of comprehensive VET programmes. Their strong labour market currency is attributable to the occupational capacity they represent, preparing for what might be termed occupational labour markets, enabling transferability between firms and jobs with diverse requirements in terms of activities (Marsden 2007). Bricklayers are thereby employed for their ability to work across a wide range of functions, guaranteed by the qualification whose possession is at the same time critical to labour market entry and to being paid at the collectively agreed 'skilled' rate. They are expected to have a high level of autonomy and an understanding of the entire labour process, the wider industry and their position within it. Their occupational capacity integrates manual and intellectual tasks and is based on a multidimensional concept of competence, which requires them to draw on and integrate a range of resources, different types of knowledge, practical know-how and social and personal competences to deal with complex situations in the workplace. They are expected to be able to plan, carry out and evaluate the work, based on professional judgment and responsible decision-making in cooperation with other occupations in the construction labour process, to carry out a broad scope of activities using a variety of materials (e.g. bricks, concrete, reinforced concrete, timber, plaster, steel and prefabricated elements) and tools and to work within a range of construction areas: new build, urban regeneration, restoration and repair and maintenance (Brockmann et al. 2010a).

Whilst the vast majority of bricklayers in all countries are employed by small and medium-sized enterprises (SMEs), there may be a higher degree of specialisation in large enterprises than in smaller firms where bricklayers are required to be polyvalent, commonly embracing related activities such as plastering or even carpentry. In France and Poland, for instance, bricklaying does not exist as an occupation in itself but constitutes only one element of a much broader one, that of mason, who is expected to build a house from the foundations to the roof, in collaboration with other occupations. This includes preparing, monitoring and delivering the work, working from technical drawings, determining the suitability of and selecting materials, applying health and safety regulations, setting out and communicating with clients and different levels of the work hierarchy. Indeed, the mason has no clear occupational boundaries, and activities may include stone masonry, plastering, finishing, concreting, steel fitting, formwork and mounting door and window frames (Méhaut and Hervy-Guillaume 2010; Kus 2010).

Whilst more clearly focused on the activity of bricklaying, the occupation is also very broadly defined in Belgium, Denmark and Germany. For example, in Denmark, the activities include bricklaying, flooring and tiling, roofing, jointing and rendering, façade cladding and scaffolding; specialisation is also possible in restoration, usually for employment in larger firms. In Belgium, bricklayers are

expected to erect walls using a variety of materials (brick, block and stone), lay foundations and connect plumbing and sewage systems; activities may also include scaffolding and insulation. The non-manual tasks include planning and organising the work; ordering materials; communication with suppliers, clients, customers and colleagues; putting in place measures for and monitoring health and safety; and ensuring the quality of the work (van Roy 2010). In Germany, bricklayers have a sound knowledge of related occupations, such as carpentry and civil engineering, which are covered in their first year of the apprenticeship. In the workplace, they operate with a high level of autonomy, planning, coordinating, monitoring and handing over the completed work (Paul and Seidel 2010).

The scope of activities is somewhat narrower in the Netherlands, where bricklayers typically hold the equivalent of NVQ level 2 qualifications, as with the English bricklayer. Bricklaying is largely restricted to brickwork, although it does include fitting insulation material and gluing (Westerhuis 2010). Nevertheless, as in the other countries, bricklayers work in relation to the whole labour process, and activities include preparing and evaluating the work, although they usually have no contact with clients. There is an increasing extent of specialisation, with concreting as well as restoration constituting specialist qualifications.

Differences in the scope and occupational profiles of bricklayers are reflected in the structure and content of VET programmes and qualifications, such as the very comprehensive programmes in Germany, where the first year covers a range of construction occupations followed by specialisation as a bricklayer, which includes activities of related occupations (scaffolding, concreting, plastering). In most of the continental countries, with the exception of Italy, VET constitutes the continuation of general education through the occupational programme, which aims to develop the person as an active citizen in wider society as well as for the occupation. They cover a broad knowledge and skill base which enable learners to work in a variety of functions and areas of construction. The notion of competence as the integration of theoretical knowledge, practical know-how and social and personal competences is central to VET.

The scope of what might be termed the continental ‘occupational’ model contrasts with that in England and Italy. Here, bricklaying remains a ‘trade’ as distinct from an occupation in the continental sense, focused on the performance of output, confined to a restricted range of tasks and with an increasingly narrow scope of operations (Marsden 2007). Bricklaying VET in turn is restricted to bricklaying, without covering other related occupations or providing an overview of the construction industry as a whole. In this respect, it is trade-based, with restricted transferability and permeability, especially as many elements – though these may be needed in the workplace – are no longer covered, including in England erecting arches and stonework, with progression above NVQ Level 3 much more difficult than in the past.

Labour market changes, including the universal practice of extensive subcontracting, have contributed to the narrow specialisation evident in England. This

is particularly the case in the house-building sector, where bricklaying is largely confined to laying bricks and blocks. In commercial activities, bricklayers may be required to carry out a wider range of tasks, including working with stone and concrete, erecting arches and using sophisticated bonds. In times of economic boom, a higher level of specialisation of skills may also be required by large companies, which commonly employ labour-only subcontractors (Brockmann et al. 2010b). During a recession, employers may seek bricklayers who are able to work at a more universal level. In England, too, there is typically a separation between manual and the intellectual functions, with activities such as measuring, setting out, reading drawings, planning, monitoring and delivering the work perhaps carried out by site managers, site engineers or supervisors. In Italy, the scope of activities of bricklayers varies greatly both by region and by individual firm. According to the collective agreement, it is focused on constructions using a large variety of materials, including stone and marble (Verdesca 2010).

### *Different Levels of the Qualification*

What stands out from the study is that English and Italian bricklaying qualifications demand less knowledge, skill, autonomy and responsibility than those in Belgium, Denmark, France, Germany and Poland and, to a lesser extent, the Netherlands. NVQ Level 2 is the typical qualification of an English bricklayer and is, for instance, largely confined to the development of bundles of task-specific skills, with the minimal educational input necessary for long-term individual development. In the other countries, with the exceptions of Italy and the Netherlands, apprenticeship is at least the equivalent of NVQ level 3 and concerns vocational, general and personal development (Brockmann et al. 2008, 2010a). There are also defined entry routes, as in the Netherlands, predicated on a qualification in turn related to wage grades determined through collective agreements, unlike the English bricklaying qualification which is not a prerequisite for labour market entry and has no clear link to collectively agreed rates.

The weak labour market currency of the English qualification is evident from the curious disparity between levels represented in (a) the collectively agreed rates, with the craftsman at the highest level and the labourer at the lowest and a range of skill rates in between; (b) qualifications with respect to NVQs, which are also the basis for the Construction Skills Certification Scheme or registration card; and (c) the wage rates in practice. Each appears to refer to a different quality of skill. In this respect, it is symptomatic but also ironic, given the increasing demand for those who have a wider range of skills and given their extensive training, that German workers employed on London's Heathrow Terminal 5 were paid a lower rate than a British 'tradesman' because they were regarded as 'multi-skilled' and as a result less 'specialised' than the 'single'-skilled British worker (Clarke and Gribling 2006).

### ***The Institutional Landscape: The Distinctiveness of the English Bricklaying Qualification***

The qualification attached to the English bricklaying apprenticeship framework is essentially skill based, broken into units which describe particular activities and tasks, known as ‘elements of competence’ and representing learning outcomes. These units at the same time constitute occupational standards derived from analysis of workplace tasks, making for difficulties in disentangling learning outcomes, performance criteria and occupational standards, given that each refers to particular workplace activities. The qualification too is split into two parts, the Diploma and the NVQ itself, and consists of different elements: technical, based on the college curriculum and drawn from occupational standards; functional skills; employment rights and responsibilities; and the NVQ gained through work experience. However, given that each NVQ level is stand-alone, it does not presuppose the lower level and is not therefore necessarily based on progression. This weakness in progression is inevitable, given that the qualification is built on output and performance in the workplace rather than on the personal development of the individual.

The notion of competence development applied in many continental countries – drawing on multiple resources involving the whole person and enabling learners to become autonomous and innovative – does not apply in the same way in the English situation. Here, lifelong learning in practice constitutes the accumulation of skills in relation to particular jobs or tasks, rather than a more holistic professional and personal development. An important aspect of the English qualification is the relationship assumed between theoretical and practical knowledge. In the context of low theoretical content, narrow skills and lack of general education, the qualification assumes that performance is to standards defined by employers and that other dimensions of competence, such as social and personal competencies, are neither required nor recognised.

Within bricklaying VET, there is nevertheless a growing contradiction, evident in England but also to a greater or lesser extent in the other countries, between the school-based route, whereby trainees are based primarily in a further education (FE) college and the work-based route associated with apprenticeship with a particular employer. There has been increasing concentration on the former given the difficulties of finding training places with employers. In England, the school-based route, though plagued by high dropout rates and having to traverse the difficult bridge between college and industry, leads to newly introduced diplomas, with the possibility to obtain the work-based NVQ element later.

The governance relationship built into the English apprenticeship framework is largely between the government, its agents and employers and represents a top-down approach designed to be employer-led and to favour market-based solutions. ConstructionSkills is the quasi-governmental body responsible for developing qualifications through a process based largely on consultation with employers with minimal input from other stakeholders, such as trade unions or the further education (FE) sector. This implies no meaningful partnership with those whose commitment

is essential to establish ZMTs (Brockmann et al. 2010c). It is at odds with most of the other countries, with the exception of Italy, where governance is based on social partnership and encompasses the distinctive interests of young people and those working in the occupation.

The lack of stability, fluidity, fragmentation and confusion of the institutional structure for VET in England is symptomatic of what might be regarded as a weak system, given the ease and speed with which changes in policy are introduced. Ongoing work (Moehler et al. 2008) has revealed that the myriad of organisations involved in skills development in construction results in a complexity of networks of supply provision that is difficult for construction companies to navigate. This difficulty is compounded by the weak and fragmented nature of the social partners and by the lack of direct ministerial responsibility for VET. Government policy seeks to create a ‘demand-led’ system which responds to employer needs at the same time as employers’ associations fragment and individual employers are reluctant to make training places available. In this situation, in the case of bricklaying, trade associations have come to play a key role in determining the nature and scope of qualifications and indeed whether these should be awarded in the first place. Trade associations are organisations founded and funded by businesses that operate in a specific trade and are primarily involved in public relations and lobbying activities and in standardisation. In continental countries with a social market economy, the role of trade associations is usually taken by sectoral employers’ organisations which also have a role in the social dialogue between trade unions and employers. Trade associations differ in that they are not industry-wide organisations but seek to defend the specific trade interests of their members.

In England, the FE colleges are key providers of VET for bricklaying trainees, whether these are apprentices or students on the ever more important school-based route. There is however an evident divide between FE and industry, between education and the labour market, one which is hardly bridged by the Sector Skills Council (SSC), ConstructionSkills, especially given changes in skill requirements and the development of a school-based route. Each route too into bricklaying – whether purely employer-based, apprentice-based, school-based with work experience, private training provider-based or simply progressing up from labourer – implies a different constellation of funding. The sources include government, the levy (via ConstructionSkills), employers and individuals themselves.

The danger with such a system, based on and bounded by a ‘skills’-based approach, is that it may simply perpetuate a low-skilled labour-intensive economy, as employers continue to build on traditional skills, ‘the skills of yesterday’, thus restricting the capacity for the development of new skills areas (Clarke and Winch 2004: 515). This is of significance in the light of the Leitch Review of Skills (2006), which recognised – however weakly – the importance of upgrading the UK skills base and of the later report on the difficulties in progress towards this by the UK Commission for Employment and Skills (2009). The key contradiction in the system is that, whilst such an upgrading suggests the need for a system closer to many continental countries, based on broadly defined occupations recognised by qualifications at different levels, the way in which the scope and content of

areas such as bricklaying is determined remains largely trade-based, as does their remuneration. In England, disparities are nevertheless evident in the labour market. The traditional bricklayer may find a home in the private house-building sector but appears increasingly restricted given the transferable, innovative and broad skill sets sought – including from immigrants – in other areas (Chan et al. 2010). Indeed, two different types of bricklaying in England can be discerned: a specialist trade for which the current NVQ is in many respects an appropriate qualification and a qualified occupation with greater underpinning knowledge and more adept at undertaking a range of activities not necessarily just associated with brick.

## Conclusions for VET Research and Practice

A number of important differences between bricklaying qualifications emerge, with implications for alignment to the EQF. The first is the different levels of qualification, with the typically English NVQ level 2 qualification and an equivalent level in the Netherlands and Italy lacking the underpinning knowledge found in the equivalent of level 3 or above of the Belgian, Danish, German and Polish qualifications. More than this, however, is the difference in occupational breadth, found even at the English NVQ level 3, with the English and Dutch bricklayers largely confined to the relatively narrow activity of bricklaying, in contrast to the broad range of activities encompassed by the Belgian, Danish and German bricklayer, for whom the task of bricklaying may play only a relatively small role.

These differences in scope and occupational breadth of bricklaying qualifications in Europe are associated with distinct notions of occupation and trade which in turn reflect differences in the countries' wider political economies, notably the labour market and systems of governance. As a qualified occupation, bricklaying is valued for the often broad and social competences assumed to be embodied in the qualification, which acts as a key means of entry into the labour market. It thereby depends on an occupational labour market, which contrasts with the fragmented and even secondary labour market on which the more narrowly trained brick tradesperson may depend (Piore and Sabel 1984). As long as EQF does not distinguish between the different natures of qualifications, establishing their equivalence across Europe will be fraught with difficulties and ZMTs difficult to establish. This means, however, at the same time coming to terms with changes taking place within occupational qualifications, which have in turn important implications for which qualifications are aligned with which.

At this stage, it is only possible to speculate about the impact that the EQF will have on the comparison of bricklaying qualifications across Europe. A first stage envisaged is the implementation of a sectoral qualification framework (SQF), proposals for which were published in 2009 for construction (Syben et al. 2009). Within this might be situated an occupational qualification framework (OQF), which would need to take up the issue of the scope of the qualification and develop a minimum specification. At the same time, the process of referencing national

qualifications with each other will need to be carried out in such a way that trust within the labour market is promoted. If this cannot be achieved, then referencing will need to be negotiated within the sector, most likely as part of the construction of an OQF. Critical here is not merely the question of scope but also the ‘vertical’ level of knowledge, skill and autonomy/responsibility at which each national qualification is pegged. Development of a useable and trustworthy OQF for bricklaying is likely to be a protracted and contentious process.

## References

- Brockmann, M., Clarke, L., & Winch, C. (2008). Knowledge, skills, competence: European divergences in vocational education and training (VET) – the English, German and Dutch cases. *Oxford Review of Education*, 34(5), 547–567.
- Brockmann, M., Clarke, L., & Winch, C. (2010a). Bricklaying qualifications, work and VET in Europe. *CLR News: Bricklaying in more than Flemish bond*, 1/2010.
- Brockmann, M., Clarke, L., & Winch, C. (2010b). *Bricklaying country report England*. Findings from the Leonardo-da-Vinci Project ‘Bricklaying qualifications, work and VET in Europe’. [www.bricklayer-llp.eu](http://www.bricklayer-llp.eu). Accessed 29 Mar 2010.
- Brockmann, M., Clarke, L., & Winch, C. (2010c). The apprenticeship framework in England: A new beginning or a continuing sham? *Journal of Education and Work*, 23(2), 111–127.
- Brockmann, M., Clarke, L., & Winch, C. (2011). *Knowledge, skills, competence in the European labour market: What’s in a qualification?* London: Routledge.
- Brown, P., Green, A., & Lauder, H. (2001). *High skills: Globalisation, competitiveness and skill formation*. Oxford: Oxford University Press.
- Chan, P., Clarke, L., & Dainty, A. (2010). The dynamics of migrant employment in construction: Can the supply of skilled labour ever meet demand? In M. Ruhs & B. Anderson (Eds.), *Labour shortages, immigration and public policy*. Oxford: Oxford University Press.
- Clarke, L., & Gribling, M. (2006). *The construction industry in London and diversity performance: The example of terminal 5* (Heathrow Report to London Metropolitan University for Greater London Authority). London: University of Westminster.
- Clarke, L., & Winch, C. (2004). Apprenticeship and applied theoretical knowledge. *Educational Philosophy and Theory*, 36(5), 509–521.
- Coles, M., & Oates, T. (2004). *European reference levels for education and training – An important parameter for promoting credit transfer and mutual trust* (Final Report). London: Qualifications and Curriculum Authority.
- European Commission (EC). (2009). *European glossary: Open method of coordination*. <http://europa.eu/cgi-bin/etal.pl>
- Kus, J. A. (2010). *Bricklaying country report Poland*. Findings from the Leonardo-da-Vinci Project ‘Bricklaying qualifications, work and VET in Europe’. [www.bricklayer-llp.eu](http://www.bricklayer-llp.eu). Accessed 27 Apr 2010.
- Leitch Review of Skills. (2006, December). *Prosperity for all in the global economy: World class skills* (Final Report). London: HM Treasury.
- Marsden, D. (2007). Labour market segmentation in Britain: The decline of occupational labour markets and the spread of ‘entry tournaments’. *Economies et Société*, 28(6), 965–998.
- Méhaut, P., & Hervy-Guillaume, D. (2010). *Bricklaying country report France*. Findings from the Leonardo-da-Vinci Project ‘Bricklaying qualifications, work and VET in Europe’. [www.bricklayer-llp.eu](http://www.bricklayer-llp.eu) Accessed 27 Apr 2010.
- Moehler, R., Chan, P., & Greenwood, D. (2008, September 1–3). The interorganisational influences on construction skills development in the UK. In A. R. J. Dainty (Ed.), *The twenty-fourth ARCOM conference* (Vol. 1, pp. 23–32). Cardiff: Association of Researchers in Construction Management.

- Paul, V., & Seidel, M. (2010). *Bricklaying country report Germany*. Findings from the Leonardo-da-Vinci Project 'Bricklaying qualifications, work and VET in Europe'. Unpublished.
- Piore, M., & Sabel, C. (1984). *The second industrial divide*. New York: Basic Books.
- Syben, G., et al. (2009). *Sectoral qualifications framework for the construction industry in Europe*. Bremen: BAQ ForschungsInstitut.
- UK Commission for Employment and Skills. (2009). *Ambition 2020: World class skills and jobs for the UK*. [http://www.ukces.org.uk/upload/pdf/UKCES\\_FullReport\\_USB\\_A2020.pdf](http://www.ukces.org.uk/upload/pdf/UKCES_FullReport_USB_A2020.pdf)
- van Roy, K. (2010). *Bricklaying country report Belgium (Flanders)*. Findings from the Leonardo-da-Vinci Project 'Bricklaying qualifications, work and VET in Europe'. [www.bricklayer-llp.eu](http://www.bricklayer-llp.eu). Accessed 27 Apr 2010.
- Verdesca, D. (2010). *Bricklaying country report Italy*. Findings from the Leonardo-da-Vinci Project 'Bricklaying qualifications, work and VET in Europe'. [www.bricklayer-llp.eu](http://www.bricklayer-llp.eu). Accessed 27 Apr 2010.
- Westerhuis, A. (2010). *Bricklaying country report The Netherlands*. Findings from the Leonardo-da-Vinci Project 'Bricklaying qualifications, work and VET in Europe'. [www.bricklayer-llp.eu](http://www.bricklayer-llp.eu). Accessed 27 Apr 2010.
- Young, M. F. D. (2009). *Alternative educational futures for a knowledge society*. Keynote speech given at EERA, Vienna.

# Chapter 19

## Trends, Issues and Challenges for EU VET Policies Beyond 2010

Pascaline Descy, Guy Tchibozo, and Jasper van Loo

### Introduction

The European Union's Lisbon Agenda expressed the need to combine major economic and social reform as part of a strategy to promote both competitiveness and social cohesion (Council of the European Union 2000) and has supported Europe in dealing with changing skill requirements and the redeployment of jobs and resources towards emerging economic sectors. Following up on the Lisbon Agenda, EU member states worked together using the open method of coordination and established several initiatives to achieve these goals. In education, the Education and Training 2010 work programme provided common objectives and benchmarks for the modernisation of European education and training systems to be achieved until 2010 (Council of the European Union 2002). In the area of vocational education and training (VET), the Copenhagen process (European Commission 2002) called for enhanced cooperation by prioritising the European dimension of VET; promoting transparency, information and guidance; recognition of competences and qualifications; quality assurance; and supporting VET teachers and trainers.

At the time of writing this chapter, progress achieved since March 2000 has been assessed, and a new ambitious strategy, EU2020, has been adopted. Skills and human capital are among the core priorities in EU2020 and are viewed as fundamental to tackle the negative consequences of the economic crisis and to give a new impulse to the progression of EU economies and societies. VET policies have to consider the complex relationships and interdependencies between education and training and the socioeconomic system. VET research examines these relationships

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and focuses on reducing complexity and improving the understanding of causes and effects to identify the means, strategies and policies expected to be most effective and acceptable in exploring and solving problems. Research and policy-making, however, often appear disconnected. ‘Evidence-based policy-making’ is a fashionable term but tends to be rhetorical, as policy-makers and researchers tend to follow their own agenda. This chapter aims to bridge the gaps between research and policy by examining links between pressures for VET modernisation and policy priorities.

## Research Problem

Focusing on VET, this chapter examines what the medium-term policy and research agenda for VET should look like. Embedded in current research and drawing on statistical evidence, we aim to achieve two goals: (1) providing evidence-based recommendations that can feed into EU and national VET policy-making debates (Cedefop 2009) and (2) identifying important issues that require more research to improve the evidence base in future VET policy-making. Three specific research questions guide this chapter:

- (a) Which trends and issues are impacting on VET and drive VET modernisation?
- (b) What lessons can be learned for future VET policy-making?
- (c) How can future research contribute to evidence-informed VET policy-making?

After the following section, which provides an overview of the method we apply in this chapter, we address these questions in turn.

## Research Method

We applied a three-stage method. The first stage concerned a scoping study to identify crucial VET research findings and issues. A scoping study aims ‘to map *rapidly* the key concepts underpinning a research area, the main sources of evidence available, and research gaps in existing literature’ (Arksey and O’Malley 2005; Mays et al. 2001).

A traditional scoping study identifies a broad research question, selects relevant studies and summarises and reports the results (Arksey and O’Malley 2005). We applied the scoping approach in a different way. In 2005, Cedefop, the European Centre for the Development of Vocational Training, organised a 2-day brainstorming meeting with VET researchers. The aim of the meeting was (1) to identify recent research – and research needs – in Europe contributing to explain the context and conditions for achieving the Lisbon goals for education and particularly for VET and (2) to identify new and emerging issues for VET research in Europe, beyond the political agenda.

The Copenhagen declaration (European Commission 2002) and the Maastricht Communiqué (European Commission 2004), which set priorities for reforming VET to contribute to the Lisbon goals, served as starting points for four focus groups dealing with various aspects of VET research. The first group focused on attractiveness and image of VET. Important research issues included attracting and retaining people in the education and training system, delivering qualifications and skills valued on the labour market and linking VET to higher education. Participants felt that future research should focus more on the impacts of various types of VET, the role of VET in different countries' education and training systems and the attractiveness and image of continuing VET.

The second focus group dealt with labour-market groups at risk. It also uncovered that VET research is mainly based on formal qualifications and proposed more emphasis on measuring skills and nonformal learning. Other priorities for research included the interaction between training demand and supply, the effectiveness of training measures and the situation of immigrants and ethnic minorities. The third group focused on new labour-market requirements, demographic change and mobility. The last group looked into innovation in teaching and learning and advocated future research in the areas of innovative approaches in workplace learning, the changing role of teachers and trainers and validation of learning.

In the second stage, the results from the brainstorming meeting and additional desk research were used to compile the following list of 18 themes relevant to VET policy and research:

1. Institutional role of VET systems and changes in governance
2. Geographical mobility
3. Social mobility and VET
4. Role of education and training in enhancing social cohesion
5. Low-skilled people on European and global labour market
6. Skill shortages
7. Improving VET attractiveness and image
8. Evaluation of recognising non-/informal learning
9. Qualification systems/frameworks
10. Benefits and costs from training investment
11. Effectiveness of new financing mechanisms
12. VET and higher education
13. Workplace as learning environment
14. Impact of lifelong guidance and counselling
15. VET teachers and trainers
16. Innovation in teaching and learning
17. Impact of European strategies and priorities
18. New emerging issues beyond 2010

These themes were used in a widely disseminated call for research papers (call for tender). The received proposals were assessed on quality and originality. Response to the call indicated that the themes were both relevant and timely. The papers were edited and published by Cedefop (2009).

Realist synthesis constituted the third stage. It is a relatively new approach to reviewing research evidence on complex social interventions, which provides an explanatory analysis of how and why (or not) they work in particular contexts (Pawson et al. 2004). The initial step of a realist synthesis defines the scope of the review and maps out in broad terms the conceptual and theoretical basis. Empirical evidence is used in the second step to back up the theoretical framework. This process is (1) iterative, as new evidence can change the direction and focus of searching, and (2) complete when additional empirical evidence no longer adds to understanding (Pawson et al. 2004).

Focusing on the trends and pressures that call for VET modernisation and the implications for various VET measures and policies, a more or less natural division into internal and external pressures surfaced. The synthesis also identified research gaps inhibiting understanding of how different trends affect VET and gave insights on how specific policies and practices support or hamper VET modernisation.

## **Research Findings**

### ***External Pressures and Their Implications for VET***

Four major types of contextual determinants push for adapting and modernising VET systems and policies in terms of target groups, links with the labour market and curricula: labour-market trends, population ageing, economic competition and the demand for social cohesion and social inclusion.

### **Labour-Market Trends and VET**

In what ways do current labour-market developments demand VET modernisation? Four dominating labour-market trends can be distinguished.

First, although the labour-market position of young people has improved in the last decades, with increasing earnings and falling unemployment (OECD 2008), their overexposure to unemployment remains a serious issue as the gap in unemployment rates between youth and adults has widened. At the same time, a significant share of young people is neither in employment nor in education or training (NEET): in 2006 in the EU, disengaged youth represented 18.6% of those aged 20–24. For young people in employment, job quality is problematic. In the EU, the share of temporary jobs in youth employment has increased from 34.9 to 40.9% between 2000 and 2006, and the percentage of youth working part-time has increased from 20.2 to 25.6 between 1996 and 2007 (European Commission 2007). Both are often involuntary. Education and especially VET might have a role to curb these trends, giving access to better quality employment and reducing the risk of complete disengagement from education and the labour market.

A second trend concerns flexicurity, a concept that combines flexible forms of work organisation and labour relations with good prospects for workers' employment and career development. Several indicators show that while flexibility has indeed increased, this is not the case for job security. Data from the OECD show a decline of the gross replacement rate of unemployment benefits from 33.3% in 1995 to 27.1% in 2005 (calculated for 19 EU member states) and a reduction of public expenditure on active labour-market policies (ALMPs) as a percentage of GDP from 1.2% in 1998 to 0.72% in 2006. Training for jobseekers and investing in continuing VET are ALMP measures to be intensified.

Third, there is the problem of skills shortages, which have been increasing in the EU. In several countries, shortages persist for information and communication technology (ICT) specialists, health-care professionals and hotel and catering staff. In addition to quantitative skills shortages, qualitative skills shortages are emerging due to the increased importance of generic or 'key' work skills which can be used in a multitude of occupational settings. Awareness of – and responsiveness to – skills shortages is critical for education, VET and labour-market policies. Skills shortages can induce firms to choose production technologies that require relatively low degrees of skill intensity (deskilling), which may result in low wages, suboptimal work organisation, low productivity and nonoptimal production and trade patterns (Cedefop 2009).

The fourth trend is that benefits to economies and societies from geographical mobility in and to the EU remain limited. Fifty years after the creation of the European Community – and despite the fact that it is a fundamental principle of the Union and that it can be beneficial to address skills shortages in national labour markets – intra-EU mobility remains limited: less than 2% of EU nationals of working age live in another member state (Cedefop 2009). The EU policy to foster student mobility has largely been based on initiatives in the fields of general education and VET, but on a limited scale: less than 3% of EU tertiary students study in another EU country each year. Another issue in geographical mobility is that the annual inflow of third country migrants has been increasing since the 1990s and that many of them are low skilled, which reinforces their disadvantaged position on the labour market and in society and hampers social inclusion. VET can be a crucial tool in recognising, validating and increasing newcomers' skills and making immigration a success.

### **Demographic Trends and Implications for VET**

Europe's population is ageing rapidly. This will have profound consequences for both initial and continuing VET (IVET and CVET). The reduction of the young age cohort will cause the total number of IVET students and graduates to decline. This decrease is estimated to amount to minus 17.6% at ISCED 3 and minus 12% at ISCED 5 by 2030 (Cedefop 2008). This will have a negative impact on the demand for teachers and trainers in IVET, which is projected to decline by 15% at ISCED 3. As a consequence of the reduction in the number of IVET participants, potential labour-market shortages are projected for 2020 and 2030.

VET has also been recognised as a powerful tool for active ageing policies. It can help ageing workers acquire and update their skills and competences (Cedefop 2009), and hence boost their employability, enable longer working lives and make labour-market participation sustainable.

### **Economic Competition and VET**

In competitive environments and in times of crisis, both high-quality initial education and regular further training are critical for firms' economic performance. In the field of VET, apprenticeship is instrumental not only in securing strong links between school and work settings but also in accommodating the growing emphasis on generic and transversal competences. Further training boosts staff knowledge and skills, which are crucial for successful process and product innovation (Brunello and Gambarotto 2007; Ng and Li 2003).

Further training also improves enterprises' survival and growth perspectives (e.g. Collier et al. 2005; Fraser et al. 2002) and enables workers and managers to improve productivity by adopting better production and management techniques (e.g. Almeida and Carneiro 2006; Liu and Batt 2007). However, despite these positive outcomes, continuing vocational training surveys show that about 40% of EU enterprises do not train their personnel at all and justify this by a lack of need, time or funds. To support the competitive power of all EU firms, policies that stimulate training are needed.

### **The Role of VET in Promoting Social Europe**

Education has been found to be significantly correlated, directly or indirectly, with a number of social cohesion indicators, i.e. civic and social engagement, life satisfaction, reduction in crime, political stability and democratisation (Campbell 2006). Key to social cohesion is not only the level of education in a given society but also educational equity, which influences trust and civic cooperation. Although social systems may be able to accommodate limited educational inequality without eroding social cohesion, beyond a certain level, political and civil liberties worsen and unrest increases (Green et al. 2006).

In Europe, the Nordic social-democratic model illustrates the expectations education and VET face. It achieves high productivity, high employment rates, high levels of income (and educational equality), good social protection and strong social cohesion, thus fleshing out some of the major Lisbon goals. Green et al. (2006) have shown that the Nordic countries largely regulate education at the local level but within a central government framework which sets common 'goals' and consider equity an important social principle as basis for the social cohesion model.

Compulsory education is organised in a unique system of comprehensive primary/secondary schools in which an encyclopaedic knowledge tradition and broad curricula prevail. Post-compulsory education is heavily publicly funded and

involves social partners in VET governance. Adult learning is more prevalent in the Nordic countries than in any other region.

Those with low levels of education and the unemployed benefit from reinforced support to access learning opportunities. VET is geared towards the needs of socially excluded groups with the aim of delivering a high ‘minimum’ standard of education and training for all. Employer-funded training is also comparatively high. The Nordic model results in low levels of inequality in skill distribution both among the adult and the young population. Although it may be difficult to transfer the Nordic model, including the role education and VET play in it, to other settings, it could act as a possible source of inspiration for future developments in other EU countries.

## **Internal Trends and Challenges**

Challenges for VET also relate to internal developments of VET policies, systems and professional practice. Three major challenges could be identified: the policies for VET attractiveness, the framing and streamlining of VET systems for transparency and mobility purposes, and the development and modernisation of career guidance policies and practices.

### ***Improving the Image and Attractiveness of VET***

VET is attractive when it draws people’s interest and has a good image. In a more demanding sense, VET attractiveness is defined by the tendency of people to use VET to reach their personal goals and if employers gladly recruit applicants from VET pathways.

As can be seen from international statistics (OECD 2005, 2006, 2007), in EU member states in general, students are not particularly attracted to VET at tertiary level, and the general attractiveness of VET to employers appears limited. In the Copenhagen Declaration and in the Maastricht, Helsinki and Bordeaux communiqués, enhancing attractiveness has been put forward as a key to increase participation in VET. Increasing VET enrolment is seen not only as a means to provide people with technical and vocational qualifications needed on the labour market but also as a way to offer qualifications to people who would not otherwise have participated in education and training beyond compulsory age.

The Copenhagen process established four priorities aimed at improving VET image and attractiveness. First, learning content, learning pathways and delivery methods had to be individualised or at least adjusted to the needs and capacities of learners to make potential entrants feel their chances of success are increased. Second, based on the idea that reversibility and opportunities are factors of attractiveness, it was recommended that school-based and apprenticeship-based

VET qualifications give access to further opportunities in terms either of education (entering other general or more advanced education) or of labour-market outcomes (internships, access to employment, wages, career). Third, attractiveness had to be improved through modernised governance focused on transparency and convenience for users, partnerships and responsiveness to individual needs. Fourth, actions on image were seen as important in raising the profile of VET.

### ***Qualifications Frameworks and Learning Outcomes***

The European qualifications framework (EQF) was adopted by the European Parliament and the Council in April 2008 to promote transparency, quality and mobility between qualification systems in Europe. Transparent qualifications based on learning outcomes enable a better match of supply and demand for skills, foster labour-market mobility and strengthen the competitiveness of member states. The particular strength of the EQF is that it allows combining hybrid forms of knowledge, skills and competences and that the acquisition of learning contents can be paused and resumed at any point.

The development of qualifications frameworks highlighted two major issues. First, the definition and interpretation of the terms knowledge, skills and competences is left to the member states, based on ‘mutual trust’. This harbours the risk that the specific grading and distinctions between individual learning levels and learning outcomes remain unclear, undermining the transparency and quality assurance function of the tool. The second concern is the reluctance of some countries to proceed with implementing the EQF.

### ***Issues and Trends in Career Guidance***

Pressures for change in the field of career guidance come from both policy trends and practice needs. On the policy side, career guidance is faced with two major challenges. First, as can be seen from the Council 2004 and 2008 resolutions on lifelong guidance, guidance has been considered a key instrument for achieving the Lisbon goals. Research has shown that guidance can contribute to educational achievement and improve the efficiency of occupational career decisions by reducing regret related to initial career choice (Cedefop 2009; Grubb 2004), which can avoid costly retraining at initial education level. But when guidance provision is not sufficiently linked to the realities of the labour market and work, it might undermine VET as an attractive option for young people. At continuing training level, research suggests that guidance supports people in identifying and finding the right training and in better timing their training efforts. Encouraging educational achievement and developing career management skills throughout life is a first challenge for guidance.

The second challenge career guidance faces concerns its fragmented nature (Sultana and Watts 2006). Recently, decentralisation and marketisation have increased fragmentation. Decentralisation is driven by a search for responsiveness to local needs, while marketisation is linked to increasing the efficiency of public employment services. Both contribute to undesirable variation in guidance quality and promote inequity among users. Furthermore, decentralisation can impede the dissemination of national labour-market information and hamper labour-market mobility. The consequence of increased fragmentation is that the very notion of guidance policy, which suggests an integrated body of objectives, means and actions, applied across the educational and employment sectors looks fictitious.

Guidance practice also drives the need for change in two main ways. First, following in the steps of Super (1963) and Holland (1973), guidance practitioners and researchers have recently emphasised the need to approach career guidance holistically (Lairio and Penttinen 2006; Watson and McMahon 2006). Guidance services users should not be exclusively viewed as 'seeking to earn a living', but be considered more comprehensively, in close consideration of their whole system of views and values. A second challenge concerns the need to reinforce skills insufficiently developed in curricula for guidance professionals' training: awareness of such issues as productivity, accountability and the public policy dimension of guidance; knowledge of changing labour markets; familiarity with ICT, internet and distance education (Watts and Dent 2006); and awareness of diversity and multicultural competence (Alexander et al. 2005).

## Conclusions for VET Policies and Research

In a context of demographic change, unemployment, labour/skills shortages and the worldwide economic crisis, the EU is engaged in a multifaceted strategy, addressing at the same time its traditional quest for internal integration and its decade-old objectives of a knowledge-based society, world-class economic competitiveness and growth, and social inclusion and cohesion. As a consequence, expectations vis-à-vis education in general, and VET in particular, are increasing. VET systems have evolved within the framework of the Copenhagen process as well as within a more general process of reframing lifelong learning and career guidance policies and will continue to change in the next decade. Several important priorities for future VET policies needed to address the challenges emerge.

First, there is much to be gained by tailoring the VET offer to the needs of disadvantaged students, the unemployed, immigrants, younger people and ageing workers and by broadening the involvement of these groups and teachers and trainers in the governance of VET systems. This will not only serve purely economic goals and increase attractiveness but also foster social inclusion and cohesion by developing a sense of belongingness to a community of practice.

VET policy should also pay sufficient attention to changes in the demand for skills and the responsiveness of VET systems to labour-market needs, but at the

same time consider the importance of a good level of generic work skills that are useful in many different work and life settings. Emerging skill needs and flexibility requirements need to be met by policies that encourage different types of learning and support people in dealing with multiple transitions during their career.

Currently, there is little systematic assessment at the European and national levels of the VET policies that are implemented. Moreover, current VET research is fragmented, often governed by those who carry it out, and is not always relevant for practice and policy-making. In the context of a European process of agreeing common policies and tools for improved VET cooperation, our main research recommendation is to organise, at European level, sound applied and theoretical and empirical research, that relates to each of the priorities set for VET. Such research should focus on accompanying and informing the policy agenda and provide guidance and evidence-based findings for the actors at supranational and national levels. It should go beyond the mere review of policies and practices in the member states to identify effectiveness factors: what works, under which conditions and for whom? Its aim should be to confront policy responses with theory and research to ensure adequate grounding of such policies. The analysis in this chapter points towards the following research priorities:

- An analysis of the relationships and interdependencies between ageing, work and learning. What are the enablers of longer working lives? What is the specific contribution of learning? How to adapt learning, but also career guidance, to an ever older public? What is the specific benefit for workplaces, enterprises, economies and societies of supporting training and learning of older adults? What is its contribution to work and life satisfaction at older age?
- An assessment of the specific economic and social advantages that employers can gain from training their workers. What are the impacts on profitability, the wage distribution and market competition? And how does it contribute to social benefits such as improved stress management, motivation, commitment to and satisfaction with work, absenteeism and turnover reduction, and better safety and health in the workplace?
- A review of the role of VET in promoting social inclusion and social cohesion. What are the specific socialisation functions VET fulfils? How can the integration of socially excluded groups be achieved through VET? How to include groups that are not politically organised in the governance and tailoring of VET?
- New methodologies to approach the issue of attractiveness and parity of esteem in a systematic and consistent manner. Why have some of the recommendations of the Copenhagen process regarding increasing VET attractiveness not been taken on board? Why are some attractiveness policies more successful than others?
- An analysis of the impact of qualifications frameworks. Do they achieve the range of institutional benefits expected, promote lifelong learning and modernise qualifications systems? What are the consequences of the shift to learning outcomes in qualifications systems for curriculum development, education methods and didactics?

- An assessment of the specific impact of VET reform on teachers and trainers. How can professional development help in coping with the realities of daily work? What impact does the rapid ageing of staff have on replacement demand for teachers and trainers, and will qualitative and quantitative skills shortages emerge in the near future?
- Evaluation of the relevance, quality, effectiveness and efficiency of career guidance practice, administration and policies. How can guidance contribute to education achievement, better timing of learning investments and successful redeployment of economically inactive people? What policy steering is needed to ensure equitable, coherent and tailor-made guidance services that are responsive to local needs?

Insufficient progress on these priorities can reinforce the disconnect between policy and research resulting from a lack of sound evidence and could lead to ‘trial and error’ approaches in policy-making. Applied research and timely evaluations should be undertaken to inform policies as they develop and are implemented. In a European context, including comparative dimensions in such research will maximise the potential for policy learning.

## References

- Alexander, C. M., et al. (2005). Building multicultural competencies in school counselor trainees: An international immersion experience. *Counselor Education and Supervision*, 44, 255–266.
- Almeida, R., & Carneiro, P. (2006). *The return to the firm investment in human capital* (IZA Discussion Papers No 1937). Bonn: IZA – Institute for the Study of Labor.
- Arksey, H., & O’Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology*, 8(1), 19–32.
- Brunello, G., & Gambarotto, F. (2007). Do spatial agglomeration and local labor market competition affect employer-provided training? Evidence from the UK. *Regional Science and Urban Economics*, 37(1), 1–21.
- Campbell, D. E. (2006). What is education’s impact on civic and social engagement? In R. Desjardins & T. Schuller (Eds.), *Measuring the effects of education on health and civic/social engagement*. Paris: OECD.
- Cedefop. (2008). *Demographic perspectives and implications for vocational education and training in the European Union*. Luxembourg: Publications Office.
- Cedefop. (2009). *Modernising vocational education and training: Fourth report on vocational education and training research in Europe* (Vol. 4 Vols.). Luxembourg: Publications Office.
- Collier, W., et al. (2005). Training and establishment survival. *Scottish Journal of Political Economy*, 52(5), 710–735.
- Council of the European Union. (2000, March 23–24). *Presidency conclusions: Lisbon European Council*. Brussels: Council of the EU.
- Council of the European Union. (2002, June 14). Detailed work programme on the follow-up of the objectives of education and training systems in Europe. *Official Journal of the European Union*, C 142, 1–22.
- European Commission. (2002). Declaration of the European ministers for vocational education and training, and the European Commission, convened in Copenhagen on 29 and 30 2002, on enhanced European cooperation in vocational education and training. Brussels: European Commission.

- European Commission. (2004). Maastricht communiqué on the future priorities of enhanced European cooperation in vocational education and training (VET): Review of the Copenhagen declaration of 30 November 2002. Brussels: European Commission.
- European Commission. (2007). *Employment in Europe 2007*. Luxembourg: Publications Office.
- Fraser, S., et al. (2002). The relationship between training and small business performance: An analysis of the Barclays Bank Small Firms Training Loans Scheme. *Environment and Planning C: Government and Policy*, 20(2), 211–233.
- Green, A., et al. (2006). *Education, equality and social cohesion*. Basingstoke: Palgrave.
- Grubb, N. W. (2004). An occupation in harmony: The roles of markets and government in career information and guidance. *International Journal for Educational and Vocational Guidance*, 4, 123–139.
- Holland, J. L. (1973). *Making vocational choices: A theory of careers*. Englewood Cliffs: Prentice-Hall.
- Lairio, M., & Penttinen, L. (2006). 'Students' career concerns: Challenges facing guidance providers in higher education. *International Journal for Educational and Vocational Guidance*, 6(3), 143–157.
- Liu, X., & Batt, R. (2007). The economic pay-offs to informal training: Evidence from routine service work. *Industrial and Labor Relations Review*, 61(1), 75–89.
- Mays, N., Roberts, E., & Popay, J. (2001). Synthesising research evidence. In N. Fulop, P. Allen, A. Clarke, & N. Black (Eds.), *Studying the organisation and delivery of health services: Research methods* (pp. 188–220). London: Routledge.
- Ng, Y. C., & Li, S. (2003). Training and productive efficiency in transition economies. *Oxford Economic Papers*, 55(4), 607–624.
- OECD. (2005). *Education at a glance: OECD indicators*. Paris: OECD.
- OECD. (2006). *Education at a glance: OECD indicators*. Paris: OECD.
- OECD. (2007). *Education at a glance: OECD indicators*. Paris: OECD.
- OECD. (2008). *Employment outlook*. Paris: OECD.
- Pawson, R., Greenhalgh, T., Harvey, G., & Walshe, K. (2004). *Realist synthesis: An introduction*. Manchester: ESRC Research Methods Programme.
- Sultana, R. G., & Watts, A. G. (2006). Career guidance in public employment services across Europe. *International Journal for Educational and Vocational Guidance*, 6, 29–46.
- Super, D. E. (1963). *Career development: Self concept theory*. New York: College Entrance Examination Board.
- Watson, M., & McMahon, M. (2006). My system of career influences: Responding to challenges facing career education. *International Journal for Educational and Vocational Guidance*, 6(3), 159–166.
- Watts, A. G., & Dent, G. (2006). The 'P' word: Productivity in the delivery of career guidance services. *British Journal of Guidance and Counselling*, 34(2), 177–189.

# Chapter 20

## ‘Evidence’ About ‘Outcome Orientation’: Austrian Experience with European Policies

Lorenz Lassnigg

### Introduction and Research Questions

This chapter provides an analysis of the Austrian policy of developing a national qualifications framework (NQF) in the context of the policy proposal of ‘outcome orientation’. It takes also a broader perspective by looking at the EQF/NQF policy from the specific angle of ‘evidence-based policy’. Outcome orientation has been one of the key concepts in education and training policy since the late 1980s, with ‘evidence’ moving up the agenda following the recent proposals for ‘evidence-based policy and practice’ from influential players like the OECD and the EU (OECD 2007; EC 2007). In the course of the EQF/NQF policy, the outcome orientation has been further specified by the notion of ‘learning outcomes’.

This chapter is undertaking the attempt of relating these concepts to each other in a reflexive way, asking to which extent the proposals of changes towards ‘outcome orientation’ and the envisaged solutions of implementing them are in fact ‘evidence based’. A main question is also whether we have evidence that these approaches might work in practice.

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This chapter is based on a lecture given at the VETNET-Forum ‘Outcome orientation – where is the evidence?’ of ECER’09, 28–30 September 2009, Vienna. See the extended version at <http://www.equi.at/dateien/ECER09-VIE-proceedings2.pdf> for additional references in German language and Internet sources that have been omitted here because of limited space.

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In order to analyse the evidence behind the policy proposal of outcome orientation, we need operational definitions of these approaches, which have been developed in greater detail elsewhere (Lassnigg 2009a) and are applied here for the analysis of the Austrian case.

Previous research about qualifications frameworks is very much divided in opposing camps of mainly critical analyses in academic research (e.g. Grollmann et al. 2006; Brown 2008; Young 2007) vs. an ‘advocacy’ kind of research oriented to issues of implementing the new policies by the OECD and EU institutions (e.g. Werquin 2007; Bjørnåvold and Coles 2007/2008; Coles and Werquin 2009; CEDEFOP 2009a, b). Those camps are valuing the potential outcomes of these policies differently, but what they have in common is that they more or less take for granted that the envisaged potential effects will actually be realised.

It is this point where the research questions of the current chapter are situated: The first question is about the potential outcomes of the broad generic policy proposals on the practices of learning and instruction; the second question asks whether these policies are ‘evidence based’.

The methodology of this study is based on a mix of concepts and analyses. Primarily the conceptual framework of evidence-based policy and practice has been developed on the basis of research literature. Then the available Austrian research literature about the NQF and the material gathered and displayed during the process of the development and consultation of the NQF have been re-analysed and reflected on the background of the conceptual scheme. To some part, a retrospective reflection on the author’s own experience during his participation and involvement in these processes is also included.

## **Challenges for Austria and Policy Context**

### ***Structures***

For Austria, outcome orientation is of special importance as the whole education and training system has been particularly ‘input oriented’ until the reforms in higher education of the 1990s (set-up of the new *Fachhochschule* based on an accreditation model oriented to new public management; Pechar 2004) and 2000s (radical reform of universities from a state-regulated bureaucratic-oligarchic model to autonomous institutions governed by service agreements and performance indicators; Kehm and Lanzendorf 2007).

The school system is still governed by a strong bureaucratic model. This means that the inputs are guiding policy-making with two respects: Provision is heavily regulated by the state, and most part of the financing is fixed in advance on basis of this regulatory system, as the results are expected to be achieved automatically from compliance with the regulations. Therefore, very few resources are available for new initiatives, and the actors’ room for discretion at the level of the education and

training processes is very much restricted, once the classroom door is closed. Very little attention has been devoted to 'outcomes' in this kind of governance system.

Austrian VET is provided at about equal share through two different and more or less uncoordinated areas or 'subsystems', (a) full-time schools and colleges and (b) enterprise-based apprenticeship combined with part-time compulsory school. The overall structure of provision is driven by strong tracking mechanisms. At the age of 10, a cohort is already divided into an 'elite' academic track and a 'common' track that is further differentiated by achievement levels. At the age of 14/15, another differentiation of a cohort starts between continuations of the 'elite' academic track leading to an entitlement for university access on the one hand and transitions into a VET system that is tracked into three achievement levels on the other hand. The upper-level VET colleges provide a double qualification for upper-level occupations and an entitlement for university access that is equivalent to the 'elite' academic track; the remaining tracks of medium-level VET schools and of apprenticeships at the very bottom of the system are competing for the groups of young people with less successful school careers and achievement whose origins are often from the lower strata of society.

Because of the disputed social and distributional effects of this structure, the international large-scale assessments of students' achievement (TIMSS, PISA, PIRLS) have gained mixed attention in Austria. The traditional neglect of 'learning outcomes' because of the 'input-related' bureaucratic logic of policy has been put in question by the observations of consistent mediocre results in international comparisons of achievement that contrast with the very high costs of the system as compared to other systems. Thus, the issue of 'outcome orientation' has moved up on the political agenda also in the school system in particular with the PISA 2006 results.

Apprenticeship, where the training firms contribute substantially to the resources and public policy has to bear only the smaller part of the financial inputs for the compulsory part-time school, has traditionally been kept separately from full-time VET schools and colleges. The delivery processes are also regulated less tightly than in school, and access has been controlled by the training enterprises.

However, this system has also been only to a relatively small degree 'outcome oriented' as not much emphasis was laid to the control of 'learning outcomes'. The political emphasis is still strongly 'input oriented' as the provision of training places and the access of young people to apprenticeships have always been in the foreground of attention, and the quality of teaching and learning as well as the employment and the careers of completers of apprenticeship have not been emphasised very much. During recent times of a short supply of training places, the quality of provision has deliberately been compromised by policies.

With respect to assessment and curriculum, there is also a division between the programmes in full-time VET institutions that are driven by traditional school curricula and 'theoretical' exams and apprenticeship that is driven by occupational standards and 'practical' exams. Consequently these two different areas of VET are differently related to 'learning outcomes', with the apprenticeship system being situated nearer with this concept than full-time institutions. However, the

qualifications are not assessed by attempts of ‘objective’ measurement so far, and a wide distribution of quality among the graduates might prevail, as has been proved with the academic upper secondary schools recently. The previous decades have shown several attempts to develop strategies of strengthening learning outcomes in the different areas of schooling, however, with big resistance by teachers’ trade unions and consequently only spare results. Recently new projects are under way to establish very modest versions of achievement standards in schooling (see the chapter about Austria in Oelkers and Reusser (2008) and Lassnigg (2009a) for a more detailed account and further readings).

As a specific feature, the VET system as a whole is covered by a complete range of formal qualifications, with the about 250 apprenticeship occupations as a basic unit (the school credentials and even university degrees are to some extent formally converted into apprenticeship occupations). Masters’ examinations following the completion of an apprenticeship in the formally regulated system of occupations have partly been a requirement for market access in many self-employed trades and also a field for the provision of programmes of further education towards trade and craft masters’ examinations. However, these very important programmes have not been included so far into the set of formal qualifications provided by the education and training system. Because of the overlap of the occupational structure of apprenticeship with economic regulations, this system cannot follow the logic of education and training requirements alone. The recent steps towards modularisation have opened new directions in this respect.

We will see in the coming sections that these features are resulting in specific demands for the development of an Austrian NQF and to the specification of learning outcomes.

### ***A Brief History of R&D in Policies Towards ‘Outcome Orientation’ in Austria***

The first deliberative move towards outcome orientation in Austria was the establishment of the *Fachhochschule* (polytechnic) system at the beginning of the 1990s. This subsystem regards itself as the forerunner of learning outcomes in Austria, as its study programmes have to specify them at module level. However, there is no stipulation as to how they must be assessed, so the difference to the specification of units of material inputs in curricula is not particularly marked.

At the same time, the prevailing *school governance system* was put into question by a commissioned research endeavour geared towards school autonomy. This included strong and concrete criticism of how the bureaucratic system made work at school level difficult as well as proposals for some fairly radical moves towards autonomy, which primarily assigned responsibility for work to the individual schools (Posch and Altrichter 1992). Outcome orientation was indirectly included here in the criticism of the system’s strong input orientation, while the overall approach clearly

followed the NPM empowerment path.<sup>1</sup> The main mechanisms were envisaged as bottom-up approach to school development based on a combination of negotiated goals defined in a school programme with a revision of the curriculum towards more complex competences (called 'dynamic competences'; Lassnigg and Mayer 2001).

A next step towards outcome orientation was the development of a comprehensive *quality assurance and quality development* (QA/QD) master plan for the school sector (Eder 2002). Whereas the previous initiatives were primarily guided by qualitative approaches of action research, the quantitative dimension has received increasing attention since the use of TIMSS and PISA results. Learning outcomes in the quantitative assessment sense came into play with the PISA 2003 results, which brought the discrepancy between high costs/resources and mediocre results on to the agenda. In addition to the prevailing bottom-up autonomy strategies at an informal 'underground' practice level, the idea of standards gained relevance at the policy level, and a number of large-scale projects have been set up to develop these standards (see the chapter on Austria in Oelkers and Reusser 2008). Interestingly, this endeavour has remained almost entirely in the bureaucratic realm, with the added support of some external expertise. PISA 2006 has played a key role in highlighting the huge discrepancy between teacher assessment grades and test results that provided additional impetus to the standards project.

In full-time VET schooling, which had already participated in the mentioned school programme development activities, a comprehensive new QA/QS initiative was developed (QIBB) in line with the European Common Quality Assurance Framework structure (Timischl 2006). It combines goals and quality dimensions in a top-down/bottom-up approach and gives schools great freedom of choice in their activities. A set of priority areas has been established at a central level, and schools are free to choose which actions they want to take towards improvement. Documentation also plays a strong role in the system. This concept has deliberately adopted an approach that combines input, processes and results, the latter being added by the inclusion of subject standards. QIBB follows the broad, qualitative outcome orientation approach illustrated above.<sup>2</sup>

Another major change has taken place in the *university sector* by the 2002 governance reform that marks a move from a highly regulated state system towards radical autonomy. Outcome orientation has been established here through service contracts, with a small number of additional performance indicators – learning outcomes do not really play a role at this level of negotiation between the Federal Ministry and the universities; they fall under the jurisdiction of the universities

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<sup>1</sup>There have always been two basic approaches to introducing a results-based orientation: a hard-core approach based on indicators, measurement and sanctions and a soft approach that combines assessment with supporting measures of empowerment (cf. Kettl 1998). Both seem to have prevailed right through to the present day, creating two basic approaches to school development – one based primarily on control and the other on support. The evidence would seem to support the need for a combination of the two, with the latter perhaps offering greater potential for strong and sustainable change.

<sup>2</sup>See: [www.qibb.at/de/home.html](http://www.qibb.at/de/home.html) (23-08-2010).

themselves. Austria is one of the early adopters of the Bologna process, although the initial changes were more structural and formal in nature. Attention was drawn to learning outcomes in a second or third phase through the launch of the EQF and the examination of the potential consequences of an Austrian NQF on universities (Lassnigg et al. 2006, see also Cendon et al. 2008).

The only area of education and training largely unaffected by these developments is *apprenticeship*. With its occupational profiles, training regulations and task-oriented external examinations, apprenticeship already views itself as having a learning outcome orientation. However, quality assurance mechanisms to augment the examination system are rudimentary, and there has even been a tendency in the last few decades to relax quality criteria due to the lack or decline in the number of training places. A reform of the public subsidy regulations introduced in 2008 specifically included quality criteria for the first time.

All in all, outcome orientation has played a decisive role in Austrian education and training policies since the late 1980s, albeit with a fairly weak regard to learning outcomes. Indeed, the issue of assessment remained particularly taboo until the publication of the PISA 2006 results.

## **The Austrian NQF Process as a Case for ‘Outcome Orientation’?**

Activities for the launch of an Austrian NQF began with two ‘feasibility studies’: one exploring the implications for higher education (Lassnigg et al. 2006) and the other exploring education and training in general (Markowitsch et al. 2006). The first of these studies identifies different NQF development scenarios and strategic options and distinguishes between two basic scenarios: (1) *translation* and (2) *reform*. The reform scenario is further subdivided into three building blocks: (2a) access, transition and permeability with specific attention to competences acquired outside formal learning systems; (2b) learner orientation; and (2c) learning outcomes. Due consideration of the organisation of the process was given to each of the reforms, emphasising different mechanisms and players for the different building blocks.

The ‘translation’ scenario was presented as a simple procedure that established a formal relationship between the existing Austrian qualifications and the EQF. The overall strategy of the study was very much advocacy based and sought to determine the consequences of the reform scenario in implementation terms. We will see that this approach has not been taken up in the further development.

The observations made in the course of the study showed that the university stakeholders did not object either to a comprehensive NQF or to using learning outcomes as descriptors. But they were irritated by the fact that the ‘new’ concept of learning outcomes had superseded the prevailing concepts put forward in previous reforms. It also became apparent that the Bologna process had simply been formally implemented (thus changing the qualification structure to a

bachelor-master-doctorate progression and allocating ECTS points to programmes), without paying any great attention to course content and the study process (a case study in Cendon et al. 2008 illustrates this development at one particular university; since the 2002 governance reform, the individual universities have developed different strategies and practices for further implementing the Bologna process).

The EQF/NQF feasibility studies were driven greatly by the task of *distributing information* to the relevant players in the education and training systems, information the researchers also had to familiarise themselves with before they could distribute it to others. It was a bit like the 'partially sighted leading the blind', while trying at the same time to determine expectations and positions regarding the 'feasibility' of a poorly understood, highly complex artefact (which perhaps even its creators and promoters at European level did not really fully understand). They were also under a great deal of time pressure, a factor that would remain an underlying issue throughout the entire process.

After the decision had been taken to start development of a comprehensive Austrian NQF, the researchers who had prepared the feasibility studies formed a new research consortium. They were commissioned to prepare a draft NQF as a basis for the consultation process and to study some basic issues in some depth. One of these issues was learning outcomes, which was primarily analysed by looking at whether the existing curricula system included formulated learning outcomes and then classifying them according to their degree of compliance with 'correctly' formulated learning outcomes based on a sample of curricula from the various 'subsystems' of Austrian education and training. Of the two basic approaches to learning outcomes mentioned in the CEDEFOP (2009b) study, only the one based on existing curricula was looked at; the other approach, whereby the development of learning outcomes is started independently from existing curricula based on the societal needs for competencies (the PISA approach), was not considered at all. There was also no broader analysis of what outcome orientation would mean in learning-outcomes terms, and no interest was expressed in this topic at this stage (Markowitsch 2009; Lassnigg and Vogtenhuber 2009).

It is worth mentioning that the Austrian response to the EQF draft proposal during the EU consultation process raised at least two key points: the possibility of sector NQFs (e.g. parallel frameworks for VET and higher education) and the painstaking elimination of all explicit or implicit references to research or higher education from the descriptors at levels 6–8, a change that was accepted by the Commission in the new version of the EQF. This move exemplifies what can be interpreted as the *main agenda* behind the NQF in Austria: namely, to present the 'real value' of its national education and training system compared to others by giving 'parity of esteem' to academic and nonacademic qualifications ('equivalent but not equal'). In essence, this means that an excellent cook or bricklayer has the same level of knowledge, skills and competences as an excellent academic or manager, because there can be no 'absolute measure' of competencies.

The NQF proposal submitted for discussion in the national consultation process included an ingenious strategy: An NQF based on learning outcomes should be developed, but since time was of the essence and the vast majority of existing

programmes did not use learning outcomes, a ‘preliminary’ classification (which could be rearranged later) should first be carried out without reference to learning outcomes. A long-term process to implement learning outcomes in the whole education and training system could be launched later or in parallel. Consequently, the report included a table proposing a preliminary (non-learning-outcomes-based) allocation of types of programmes to (learning-outcomes-based) levels. A non-Austrian observer might conclude that this procedure would create a ‘preliminary’ NQF that is definitely not learning-outcomes based. Parallel some sector-specific feasibility studies in construction, health and tourism also explored the applicability of the EQF in specific sectors, primarily by discussing how existing occupational and training profiles might fit the proposed levels with stakeholders and experts (see the resp. chapters in Markowitsch (2009)).

Some Austrian observers noted this shortcoming during the consultation process: the industrialists (the main promoters of education and training reform for some years and early adopters of a competence-based approach; cf. Lassnigg and Mayer 2001) and the Fachhochschule stakeholders (who claim that only ‘fully learning-outcomes-based’ programmes – their own in particular – should be classified in the NQF).

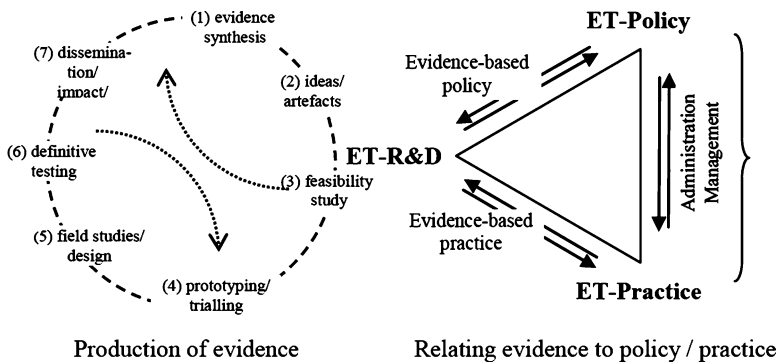
As was to be expected, the table allocating programmes to levels proved to be the consultation document’s most contentious proposal. One track of VET even ‘petitioned’ for a specific allocation for some programmes, with some 60 individual players submitting a pre-prepared text (about one-fifth of those submitting statements to the consultation process).

## **R&D and the Use of Evidence in the Austrian NQF Process**

### ***A Conceptual Framework for the Analysis of Evidence-Based Policy and Practice***

Concerning evidence-based policy and practice, two key questions can be identified: What should count as ‘evidence’, and how and by whom is it produced? How comes the evidence into policy and practice? Here we use two frameworks that are borrowed from OECD work about educational research and development (R&D; OECD 2007, see also EC 2007).

The OECD has proposed a model to describe the research cycle in educational R&D, which systematically combines different kinds of evidence to a comprehensive R&D standard model that tries to bridge the theoretical and methodological divisions of the research community (OECD 2007; see also Gorard and Taylor 2004). This model divides the research cycle into seven stages and two sub-cycles: (1) evidence synthesis, (2) development of ideas/artefacts, (3) feasibility study (stages 1–3 form the *descriptive* sub-cycle), (4) prototyping and trialling, (5) field



**Fig. 20.1** Conceptual framework of ‘evidence-based policy and practice’ (Source: own compilation, ‘production of evidence’ based on OECD 2007 and Gorard and Taylor 2004)

studies and design stage, (6) definitive testing (stages 4–6 form the *causal-analytic* sub-cycle) and (7) dissemination, impact and monitoring.<sup>3</sup>

Based on this framework, we can assess the actual policies according to the stage where the available evidence is situated. In Austria, for example, there is no research at all that meets the requirements of the second sub-cycle and very little – if any – research that fulfils the conditions of the first sub-cycle, that is, it would include a synthesis of evidence and a feasibility study; the main bulk comprises ad hoc and ex post studies or the development of ideas/artefacts without any systematic application. Most of the available narratives in the European and international space are also situated at stage (2) of development of ideas/artefacts. More recently some steps towards stage (3) feasibility studies have been taken, and going back to some sorts of evidence synthesis (1), very controversial conclusions are taken by different researchers.

When it comes to transferring ‘best evidence’ into policy and practice, two important divisions must be emphasised. Firstly, there is no unidirectional path between R&D and policy/practice – they must both be seen as independent elements (evidence-based policy and practice cannot lead to R&D directing policy and practice, but must instead respect the complex interactive relationships between the two). Secondly, there is a division between policy and practice, which ultimately results in policy trying to influence or control practice. Since there is also a distinction between the individual realms of practice themselves (i.e. between policy practice and education and training practice), we also find ourselves confronted with separate R&D channels, each with their own different problems and demands. It is thus reasonable to assume that R&D into the *relationship between policy and practice* constitutes a very specific and (quite probably) problematic domain (Fig. 20.1).

<sup>3</sup>Similar standards can also be applied at a subdiscipline or subfield level (see Flay et al. 2005 as an example).

Policy and practice is linked by administration and management that is organised through different types of governance systems: bureaucracy, market, school or local autonomy (Glatter 2002). As shown in Lassnigg (2009b), these types of governance are differently related to R&D and consequently provide different basic conditions for evidence-based policy and practice.

In the bureaucratic system, policy is guiding R&D and controls the use of its results. Practice tends to be separated from R&D as policy acts as the main gatekeeper of 'evidence-based practice'. As a result of this conceptual analysis, we can end up in a shift towards evidence-based policy without achieving evidence-based practice. Thus, outcome orientation might be implemented at the policy level, however, without reaching the envisaged results in practice.

## **Reflection on Austrian Experience**

Using the triangle of R&D, policy and practice as heuristic, the following section now examines how research has been utilised in evidence-based policy, evidence-based practice and the transformation of policy into practice.

### ***Evidence-Based Policy?***

The launch of the EQF and the decisions to develop and implement an Austrian NQF are located at a policy level. As already pointed out, this level has already been the subject of several R&D activities (e.g. the feasibility studies and in-depth studies and proposals for the NQF in Austria, a set of pilot projects at EU and national levels, the preparation of a summary of the consultation process).

These activities have provided a limited exploration of ideas and artefacts and have served more to provide information to the field than observations. Similarly, their mission lies more in advocating the new proposals than generating evidence. A descriptive summary of the consultation process detailed its initial conclusions.

The R&D results were put into pragmatic use by the steering group, which edited the consultation report. Subsequently to the consultation process, a predominantly negotiation-based approach was taken that is very much in line with Austrian political culture.

In terms of the research cycle, the activities reside mostly at stage (2) development of ideas/artefacts, and in terms of the triangle, the gatekeeping role of policy in the bureaucratic system is corroborated.

### ***Evidence-Based Practice?***

At the practice level, we must first identify how the core processes of teaching-learning and assessment are (potentially) influenced by the EQF/NQF and ascertain whether R&D actually plays a role in these channels.

As outlined above, the overall NQF procedure has been shaped in a way that limits its influence on practice. In general, research activities as an evidence base for practice are limited in Austria, where pragmatic development activities prevail, supported in part by (commissioned) research. Examples include the VET quality system (QIBB: [www.qibb.at](http://www.qibb.at)), the formulation of learning outcomes (VQTS: [www.vocationalqualification.net](http://www.vocationalqualification.net)), projects exploring the alignment of education and training programmes and occupational profiles to EQF levels (see the contributions on construction, tourism and health occupations in Markowitsch 2009) and an exploration of RAPEL possibilities in Austria (Schneeberger et al. 2009). Practice-oriented development activities are found more at the institutional-regulatory than at the teaching-learning-practice level.

The direct linkage between R&D and practice in the triangle is weak or non-existent as expected in the bureaucratic governance model.

### ***Transformation of Policy into Practice?***

The relationship between policy and practice concerns the governance mechanisms in the system. The question here is whether and how these are supported by R&D.

The NQF governance system set up by the Ministry of Education works very closely with the VET administration authorities and includes other ministries responsible for some aspects of education as well as the social partners (i.e. the employee and employer federations). Several other stakeholders were also involved in the consultation process. These political activities, along with the final editing of the consultation report, were carried out without R&D involvement. The system's mission is directed at aspects of European and international visibility, and it has gained broad acceptance by external stakeholders. However, neither the other education areas nor the education institutions and practitioners have been involved in the governance system. Subsequently the process has got stuck in conflicts between the 'subsystems' (VET supporting it, while general education and higher education objecting) resulting in part from their different views of the EQF/NQF levels. Recently the government has taken the decision that two parallel QFs should be established at levels 6–8, one for higher education and one for VET.

As noted above, the use of learning outcomes to influence teaching/learning has been postponed. Major challenges here include the development of valid (external) assessment criteria and the access procedures to higher education. It is questionable whether the policy-driven, voluntaristic approach will support future changes in the

education and training system. ‘An NQF that is owned by an administration and whose use is limited largely to official publications probably serves little purpose’ (CEDEFOP 2009b, p. 157).

## Conclusions

We would like to conclude by highlighting two general issues. Firstly, the shape and impact of evidence-based policy and practice must be expected to vary depending on the governance system that shapes the relationship between R&D, policy and practice. In a bureaucratic system (as is clearly the case in Austria), policy assumes a position of a central gatekeeper which determines research through commissioning and determines the use of this research by trying to control practice. Direct relations between R&D and practice are basically avoided, thus limiting both the interest of practitioners in evidence and their ability to use it. Secondly, conducting R&D for use in evidence-based policy requires knowledge and competence not only of practice and the matter in hand but also of policy and, moreover, the practice of policy-making. If the concept of use-inspired basic research is to prevail, researchers must be educated both in the basics of political science and in methodology and the philosophy of science.

In Austria, policy has drawn selective support from R&D in its endeavours towards outcome orientation and has used this R&D in an even more selective manner. The main R&D impetus has been placed on the qualitative, empowerment-oriented outcome orientation approach. With the exception of the – more or less separate – standards project, there had been very little activity relating to learning outcomes and competencies prior to their appearance on the agenda as a result of the EQF/NQF process. Indeed, outcome orientation had predominantly been assigned a meaning that did not include learning outcomes.

## References

- Bjørnåvold, J., & Coles, M. (2007/2008). Governing education and training; The case of qualifications frameworks. *European Journal of Vocational Training*, No. 42–43, 203–235.
- Brown, A. (2008). Limitations of levels, learning outcomes and qualifications as drivers towards a more knowledge based society. *US-China Education Review*, 5(1), 9–17.
- CEDEFOP. (2009a). *Modernising vocational education and training. Fourth report on vocational education and training research in Europe: Synthesis report*. Luxembourg: Publications Office of the European Union.
- CEDEFOP. (2009b). *The shift to learning outcomes. Policies and practices in Europe*. Luxembourg: Office for Official Publications of the European Communities.
- Cendon, E., et al. (Eds.). (2008). *Implementing competence orientation and learning outcomes in higher education – Processes and practices in five countries*. Krems: Donau Universität.
- Coles, M., & Werquin, P. (2009). The role of national qualifications systems in helping to modernise vocational education and training systems. In CEDEFOP (Ed.), *Modernising vocational education and training. Fourth report on vocational education and training research*

- in *Europe: Background report* (Vol. 3, pp. 141–178). Luxembourg: Publications Office of the European Union.
- EC-European Commission. (2007). *Towards more knowledge-based policy and practice in education and training*. Commission Staff Working Document, 28.08.2007, SEC(2007) 1098, Brussels. Retrieved August 17, 2012, from [http://ec.europa.eu/dgs/education.culture/publ/pdf/educ2010/sec1098\\_en.pdf](http://ec.europa.eu/dgs/education.culture/publ/pdf/educ2010/sec1098_en.pdf).
- Eder, F. (Ed.). (2002). *Qualitätssicherung und Qualitätsentwicklung im österreichischen Schulwesen*. Wien: Studienverlag.
- Flay, B., et al. (2005). Standards of evidence: Criteria for efficacy, effectiveness and dissemination. *Prevention Science*, 6(3), 151–175.
- Glatter, R. (2002). Governance, autonomy and accountability in education. In M. Preedy, C. Wise, & R. Glatter (Eds.), *Strategic leadership and educational improvement. Leading and managing for effective education* (pp. 44–59). London: Sage.
- Gorard, S., & Taylor, C. (2004). *Combining methods in educational and social research*. London: Open University Press.
- Grollmann, P., Spöttl, G., & Rauner, F. (Eds.). (2006). *Europäisierung Beruflicher Bildung – eine Gestaltungsaufgabe*. Hamburg: LIT Verlag.
- Kehm, B. M., & Lanzendorf, U. (2007). The impacts of university management on academic work: Reform experiences in Austria and Germany. *Management Revue*, 18(2), 153–173.
- Kettl, D. F. (1998). *Reinventing government. A fifth-year report card* (CPM report 98-1). Washington, DC: The Brookings Institution.
- Lassnigg, L. (2009a). 'Evidence' about 'outcome orientation' – Austria in a comparative perspective. In L. Deitmer, L. Lassnigg, & S. Manning (Eds.), *Proceedings of the ECER VETNET Conference 2009 (ECER'09)*, September 28–30, 2009, Vienna. Retrieved August 17, 2012, from <http://www.b.shuttle.de/wifo/abstract/ecer09.htm>.
- Lassnigg, L. (2009b). Policy learning and outcome orientation in Austrian VET – Theoretical and empirical explorations. In F. K. Oser et al. (Eds.), *VET boost: Towards a theory of professional competencies* (pp. 385–408). Rotterdam/Taipei: Sense Publishers.
- Lassnigg, L., & Mayer, K. (2001). *Definition and selection of key competencies in Austria*. Country report, BFS-OECD Project DeSeCo. IHS-Sociological Series 53, Vienna: IHS. Retrieved August 17, 2012, from <http://www.ihs.ac.at/publications/soc/rs53.pdf>.
- Lassnigg, L., & Vogtenhuber, S. (2009). *Von Lehrplänen zu Lernergebnissen: Ergebnisorientierte Beschreibung von Qualifikationen des formalen Bildungssystems in Österreich, in Markowitsch*. In J. Markowitsch (Ed.), *Der Nationale Qualifikationsrahmen in Österreich. Beiträge zur Entwicklung*, J. op. cit. (pp. 71–96). Vienna: LIT Verlag.
- Lassnigg, L., et al. (2006). *European qualifications framework – EQF in the context of tertiary education*. Vienna: Federal Ministry of Education, Science and Culture.
- Markowitsch, J. (Ed.). (2009). *Der Nationale Qualifikationsrahmen in Österreich. Beiträge zur Entwicklung, Studies in Lifelong Learning 3*. Wien: Lit Verlag.
- Markowitsch, J., Schlögl, P., Schneeberger, A. (2006). *Europäischer und nationaler Qualifikationsrahmen. Stellungnahmen zum Arbeitsdokument der Europäischen Kommission sowie erste Befunde für Österreich. Abschlussbericht*, Wien.
- OECD. (2007). *Evidence in education. Linking research and policy*. Paris: OECD.
- Oelkers, J., & Reusser, K. (2008). *Qualität entwickeln – Standards sichern – mit Differenz umgehen* (Bd. 27). Bonn/Berlin: BMBF Bildungsforschung.
- Pechar, H. (2004). The emergence of the accreditation model 1990-1994. In J. Pratt (Ed.), *The 'accreditation model'. Policy transfer in higher education in Austria and Britain* (pp. 53–72). Oxford: Symposium.
- Posch, P., & Altrichter, H. (1992). *Schulautonomie in Österreich. Bildungsforschung des BM für Unterricht und Kunst* (Bd. 1). Wien: BMUK.
- Schneeberger, A., Schlögl, P., Neubauer, B. (2009). Zur Anerkennung von nicht-formalem und informellem Lernen im Nationalen Qualifikationsrahmen, in Markowitsch, J. op. cit. (pp. 111–132).

- Timischl, W. (2006). QIBB – The Austrian VET initiative to assure and further develop quality in the school-based education system. In BMBWK (Ed.) VET quality initiative (pp. 25–47). Vienna: BMBWK.
- Werquin, P. (2007). Moving mountains: Will qualifications systems promote lifelong learning? *European Journal of Education*, 42(4), 459–484.
- Young, M. (2007). Qualifications frameworks: Some conceptual issues. *European Journal of Education*, 42(4), 445–457.

# Chapter 21

## Successful in Reforming the TVET System and Shaping the Society: The Example of the Mubarak-Kohl Initiative

Edda Grunwald and Bernhard Becker

### Introduction

School systems in developing countries have often proved inadequate in terms of transmitting labour market relevant skills, attitudes, behaviour and general know-how that facilitate the transition of young people from the formal education system into the labour market. In light of this, education systems have looked for a way of combining theoretical and practical education and training, with varying success. Education and training approaches that directly connect formal general schooling and vocational careers and which focus on facilitating school-to-work transition by increasing the employability of trainees differ from traditional apprenticeships which are skills acquisition in praxis only. Evidence suggests that the Mubarak-Kohl Initiative for Dual System (MKI-DS) in Egypt is achieving increased employability and contributes to a better school-to-work transition of graduates.

### *Egyptian Technical and Vocational Education and Training (TVET) Context*

In Egypt, 32% of the population is between 15 and 29 years of age. In 2010, 790,000 individuals will enter the labour market looking for a maximum of 200,000 jobs.

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Where job vacancies exist, jobseekers are often not well matched to the vacancies, and, in many cases, labour market information is difficult to access (Grunwald and Lotz 2009). Around 80% of those who are unemployed in Egypt are between 15 and 24 years of age. Estimated 32% of young men and 59% of young women in the cluster have no jobs.

The overall TVET system in Egypt is largely government led, very diverse and focussing mainly on educational attainment and certificates. It involves about 22 ministries and agencies. About two-thirds of students in secondary education attend Technical Secondary Schools (TSS). The TSS system is to equip youth with the necessary technical knowledge and skills as preparation for the workforce (CID Consulting April 2009b, p. 7). The vast majority of TSS graduates have to master the challenge to enter directly into the labour market (Amer 2007, p. 8). Currently, 1.8 million students are enrolled in TSS. However, only 50% of enrolled TSS students successfully graduate, and a large proportion of them leave school to go into unemployment (Assaad 2008, p. 31). Despite this, the proportion of TSS graduates has increased sharply. The male labour market has become increasingly dominated by TSS graduates who now make up over 30% of the male working age population in both urban and rural areas. An increasing number of women are also TSS graduates (4% in 1988 to 24% in 2006).<sup>1</sup> Unemployment and unemployability are further exacerbated by attitudes to the labour market and the non-acceptance of certain labour market opportunities which are culturally determined.

### ***The Egyptian Cultural Context and Its Impact on Young Jobseekers***

An understanding of Egyptian culture can provide important insights into attitudes, values and beliefs about work and work ethics and their relevance to the improvement of employability on which the key intervention, the MKI-DS described here, is based.

Contributing cultural factors, which cut across the demographics but impact particularly on young people, include:

- Difficulties in vertical mobility in a society which is segregated along class lines. Class corresponds with social status. Breaching the class barriers is perceived as being nearly impossible, a perception compounded by fears of downward movement.
- TVET is seen as a poor second choice in terms of education: the options it creates for employment are seen as of less value in terms of culture (i.e. marriage ability).
- A desire for employment that provides an opportunity for social advancement, even if it does not have long-term potential.

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<sup>1</sup>DRAFT 2009 EHDR, Chapter on TVET and Youth, p. 2–3

- A focus on family and a conservative approach to gender issues.
- The centrality of culture as a strong pillar of identity, on which perceptions and work ethics are based.
- A belief, based on fact, that education and certificates improve social status, irrespective of their relevance (Amry 2008; Amry and Augat 2008).

These cultural perceptions impact directly on how work is seen and what is suitable for men and women. Men are under high pressure to perform as providers of family income. Women are still mostly expected to be housewives and mothers and are more socially controlled than men. The management and leadership style in Egypt has been described as “control-fear symbiosis” where control and fear perpetuate each other and create a hostile working environment with low productivity, low motivation and fear of innovation and change. Communication, information flow and reflection would be essential steps to break this vicious cycle (Amry 2008; Amry and Augat 2008).

### ***The Mubarak-Kohl Initiative for Dual System (MKI-DS)***

The MKI-DS is an attempt to address some of the major deterrents to an effective labour market among young people in the country. MKI-DS’s success needs to be seen against the characterisation of the Egyptian education system and the labour market as well as the Egyptian culture described above.

MKI-DS started as a bilateral Egyptian-German technical cooperation programme. It was introduced in 1994 and was the first initiative towards establishing the links between technical education and the labour market. References were made to the German model of apprenticeship but with important adaptations to the Egyptian context and system. Core is the public-private partnership (PPP) on policy level as well as with regard to steering, financing and implementing of technical education. This has led to the introduction of new curricula agreed by both business sector and Ministry of Education (MoE), the training of trainers, a demand orientation of technical education and the renovation of the physical infrastructure of a selection of technical schools. The programme’s aim was to have graduates’ qualifications become more relevant to the labour market through a combination of practical work and work-process experience with formal schooling. Students at the postprimary level (TSS) spend 3 years attending formal education for 2 days a week and working in companies or workshops for 4 days a week.

The MKI-DS is now a fully and sustainably integrated, growing scheme within the Egyptian education system<sup>2</sup> under public-private cooperation of governance: regional, sectoral coverage, occupational profiles and curricula are decided by joint committees, only then approved by the MoE. The rights of the state to manage the

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<sup>2</sup>The MKI-DS is now legally integrated at the Ministry of Education, Decree Nr. 361 of 10.11.2008.

affairs of the country are recognised, but corporate sector institutions<sup>3</sup> are included in governance structures as an integral part: at local level in the form of the Regional Units for Implementing the Dual System (RUDS) and at a national level by the National Center for Human Resources Development (NC-HRD). The concept offers a wide range of possibilities to realise the approach and accommodates the realities of Egypt. The pivotal aspect of it is that the business sector and MoE assume joint responsibility for the outcomes (CID Consulting April 2009b, p. 12).

In quantitative terms, its achievements include the following:

- Twenty-two out of twenty-seven governorates in Egypt offer the MKI-DS option.
- Seventy-six technical secondary schools participate (as of scholastic year 2008/2009).
- More than 1,800 companies accommodate and train students.
- There have been 24,000 graduates (13% of them female).<sup>4</sup>
- Nearly 13,000 students are currently enrolled.
- Thirty-two occupational profiles have been developed and implemented.
- The growth rate of enrolment in the MKI-DS is stable – even in times of financial and economic crisis.

The most important impact, however, is the enhanced transition from general schooling to vocational careers through a form of apprenticeship that has built vocational identity, moving technical career choices from a dead-end option to interactive employability.

Against this backdrop and the modest size of MKI-DS in a country with 1.8 million students enrolled in TSS, the potential for further scaling up of the scheme has to be considered.

### ***Apprenticeship – From the Classroom to the Workplace: The Fostering of Interactive Employability and the Link to Job Quality***

Interactive employability is a prerequisite for gainful and acceptable employment on the side of individuals/jobseekers (to become and stay employable) and potential employers (to be able to employ effectively and retain good recruits). It means that employers and jobseekers need to be able to exchange information and articulate and consider interests, needs and expectations. It is important to enter into a dialogue with the intention of reaching a balance of interests, which makes the transition from school to work optimal for both jobseeker and employer. Inherent

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<sup>3</sup>Those intermediary institutions are operative units of the business sector, registered as NGOs. They are financially sustainable through service fees paid by companies involved in MKI-DS.

<sup>4</sup>There are different monitoring sources: conservative figures announce 22,000 (01/2010).

in this is agreement about job quality which combines standard-related factors with individual perceptions and expectations of what a good job is taking into account, e.g. cultural, regional and gender aspects (GTZ/MKI-vetEP 2008a, b). The mutual understanding between employer and employee of what each values in the work situation, and the accommodation of both sets of interests, is most likely to result in the desired outcome of improved productivity and improved employment status to the benefit of both parties.

It is the thesis of this paper that, where a scheme such as MKI-DS exists, it develops interactive employability through exposure of future employees to the workplace and of employers to the needs and priorities of the future jobseekers. In this way, agreement is reached on job quality with results that are evidenced by the tracer studies of MKI-DS graduates discussed below. Indications are that job quality in such situations improves over time (Assaad 2008).

## **The Methodology of the Tracer Studies**

Two tracer studies of the MKI-DS have been done (07/2007; 03/2009) (CID Consulting 2007; CID Consulting March 2009a). The 2009 tracer study covered recent graduates from the 2008 MKI-DS batch (2 governorates: Sixth of October [urban], Sohag [rural]; MKI-DS specialisations: 8; mean age of 18; females divided equally between 2 specialisations; comparison with TSS and PVTD schemes). The 2007 tracer covered 3 graduation groups (1997/1998; 1998/1999; 2002/2003; 3 governorates: Sixth of October [urban]; Mahalla [peri-urban]; Fayyoun [rural]; 8 specialisations; m/f ratio 87:13). All tracer studies were using questionnaires, conducting face-to-face interviews as well as focus group discussions. Nevertheless, the sets of figures are not directly comparable; comparisons will only be made where useful.

## **Tracer Study Implications**

### ***A Shift in Traditional Approaches to the Labour Market Among Graduates of the MKI-DS***

Evidence from the tracer study suggests that there are key areas in which the MKI-DS has had an impact with regard to enhancing the results of the traditional TSS (Grunwald 2008):

- Increasing interactive employability
- Enhancing the relevance of the workplace training
- Increasing the information flow about the labour market
- Loyalty to job and vocational identity

- Commitment to further learning
- Increased ambition to become either better in a job or increased entrepreneurship

The studies show that for MKI-DS graduates, technical education is preferable to general education because it teaches an occupation, provides early exposure to practical experience and increases job opportunities. They think that MKI-DS is preferable to TSS for reasons such as being both theoretical and practical, building relationships between them and the employers, having better curricula, the prestige associated with it and that employers prefer MKI-DS graduates and treating them better.

Fifty-six percent of the MKI-DS graduates (2008 – Sixth of October) are currently pursuing further studies. Nevertheless, a high percentage of those who are continuing their education are doing this while working, with the implication that they are contributing to the expenses of going on with education. While overall more men than women are continuing their studies, 40% of the females in the Sixth of October sample are doing so.

More graduates seem to opt for shorter-length courses. This indicates both a concern about opportunity cost and a commitment to a chosen area of study and a desire to further qualifications in it. Nevertheless, the results show both a commitment and loyalty to the job/field of specialisation and to continuing study in the respective field. It is worth noting that the vast majority of TSS graduates do not pursue further technical studies (only 8% do) (CID Consulting March 2009a, p. 3).

There is evidence that the MKI-DS has produced young workers who are now actively questioning the quality of their jobs in a constructive manner. In general, this evidence needs to be sought in the retention rate which has traditionally been very low with first-time employees in jobs in Egypt. Increased retention suggests happier employees and employers, which is what one would expect from interactive employability and negotiation about job quality.

Fifty-three percent of the sample (2009 tracer) reported that they were currently employed (more in Sixth of October than in Sohag; more males than females). Only 24% of the sample neither work nor pursue studies and further disaggregated; only 16% of the males neither work nor pursue studies while this applies to 50% of the females. The report notes: “The fact that they all get a taste of work and are drawn into the cycle of regular employment is a significant finding. It draws a profile of an emerging technical education graduate who has acquired an acceptance of the discipline and the work ethos of the private sector. It also demonstrates that many young Egyptians have made a deliberate decision to enter the labour force at a relatively young age and see themselves growing in it as a career path”. This speaks to both increasing retention and increasing vocational identity.

Approximately 32% of those currently working were employed in the factory where they had been trained during MKI-DS. This shows an emerging relationship between MKI-DS graduates and MKI-DS companies. “(i)t would seem that MKI-DS factories have begun to recognise the training and preparation provided to graduates as a criterion for employing them. It would also seem that graduates have begun to acquire a profile which is rendering them attractive as potential

workers to the companies who now have first-hand experience with the nature of MKI-DS training and qualification” (CID Consulting 2009a, p. 26). This is much more marked on the Sixth of October than in Sohag. When comparing graduate retention between 1997/1998 and 2007/2008, it had gone from 9 to 32% overall (focus on Sixth of October). This suggests that the MKI-DS has been learning from past experience and increasing its efficacy.

The notion of increased vocational identity was borne out by the finding that 37% of graduates in the sample saw themselves working in a factory/company in their field of specialisation after another 10 years. 25% said they would own their own enterprise. This is an emerging trend in Egypt. This cannot be wholly attributed to the MKI-DS; some credit must be given to the personal first-hand experience of MKI-DS graduates in both companies during the MKI-DS experience and afterwards with markets with regard to working conditions, business models, risk factors and potential earnings. They take the opportunity to conduct their own assessment of market-based business realities, market share, pricing practices, production process, etc. and thus to acquire labour market information that informs their choices and their negotiating skills.

Two-thirds of the sample said they would prefer to work in Egypt rather than abroad, suggesting that graduates’ perception of the local labour market is improving. Seventy-five percent of those who are working currently are prepared to travel within Egypt to find a better job. This “points to the relationship between experience with employment and job mobility. A willingness to consider moving for better opportunities seems to have been engendered by the experience of working and gaining an income” (CID Consulting 2009a, p. 50). Those currently employed believe that they have an opportunity to choose between jobs (53%).

When asked to rank criteria for choosing a job, the six most selected criteria in descending order were salary, in the graduates’ field of specialisation, treatment in the workplace, insurance, fixed working hours and proximity between home and work. The prominence of treatment at work suggests a more negotiated approach to the work relationship than is the traditional mode.<sup>5,6</sup> Other criteria which had some prominence included opportunities for career development, degree of knowledge and experience to be acquired and efficiency of management and managers. In general, these findings suggest that graduates are beginning to ask questions about job quality for various criteria, and this is likely to have a long-term effect on the quality of jobs offered.

The most common reason given for preferring to work in companies at present, rather than opting for immediate self-employment, is a belief that learning and

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<sup>5</sup>For women, proximity of work and home was of more importance than treatment in the workplace, reflecting the cultural norms which still inhibit the relationship between women and the labour market.

<sup>6</sup>More than half of the sample asks about industrial safety/accidents in the workplace before accepting a job. The importance here is in the “asking”. It indicates more interaction.

experience in companies, given the larger capital they have, are greater.<sup>7</sup> All of this adds to a picture of an enhanced understanding of the labour market.

The need to have friends or relatives in the workplace, previously highly rated, is now one of the lowest criteria for job selection, for both men and women.

There are also indications that young Egyptians are becoming more networked in their approach to the labour market, making use of newspapers and the Internet in their search for jobs.<sup>8</sup> Nevertheless, family, friends, personal connections and relatives remain the main source of information about the job market. In the rural areas, television is a more used vehicle for job search than the Internet which is increasingly popular in urban areas.

### *The Role of the Governance Structures*

The sustainability of the indicators of success from the MKI-DS lies, to a large extent, in the way in which governance of the scheme has been harmonised between the private sector and the government. One of the objectives of MKI-DS in Egypt is to improve technical secondary education by offering learners the opportunity for practical, enterprise-based learning while still in school. The success of MKI-DS lies in its ability to offer relevant labour market-oriented technical education and training, giving the private sector a prominent role in the process. Key is that the private sector and the MoE both engage in the design of the learning and assume joint responsibility for the outcomes.

To harmonise the relationship between the private sector and the state, the Union of Investors' Associations established the Regional Units for Implementing the Dual System (RUDS) entitled as an autonomous body responsible for promoting MKI-DS and following up on in-company training. Twenty-one RUDS function on the governorate level to regulate enrolment and ensure quality of training inside the companies. The role of the RUDS is to assess the needs of partner private sector companies with regard to training, invite students to apply, screen applicants, match them with enterprises and monitor their progress during the company-based training phase. Furthermore, they are involved in final examination, in particular the certification of the practice part (specific certificate). The RUDS is responsible for ensuring that the demand orientation under MKI-DS is fulfilled.

Curriculum for the theoretical segment in technical schools and plans for in-company training are formulated in cooperation with representatives of the business sector, based on the actual needs of the labour market and the business sector.

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<sup>7</sup>Where they did opt for self-employment as an immediate option, it seemed to be about a resistance to being "controlled". It would be useful to see if this preference for entrepreneurship arises from the MKI-DS approach, but this would require a study among TSS graduates which has not yet been done.

<sup>8</sup>This is more marked in the urban areas than in the rural areas.

Obviously, the idea of combining schooling with workplace and work-process experiences is starting to trickle down into the system with new forms and new partners.

The MoE now operates – additionally to the “classical” MKI-DS – a form of dual-system schools where agreements are made with private sector companies to provide training and schooling within the company compound. There have even been individual cases where major private businesses have obtained ministerial decrees to establish vocational schools inside their own premises to provide education and training highly specific to their own industries. Or sometimes training is delivered in “blocks”, students spending a certain number of weeks in school and then an equivalent number of weeks inside the enterprise. All these initiatives and schools are supervised by the Ministry of Education.

As yet, however, no comparison has been done to test whether these variations on the MKI-DS produce comparably good results, going beyond simply employment in quantitative terms by including the elements of interactive employability and job quality enhancement discussed above. In both these areas, the direct involvement of the business sector in governance and implementation clearly has an important impact and ensures that there is a two-way learning stream between the training process and the employment environment. Those schemes which include the private sector are able to build on the substantial equipment capacity of the sector, on its connection to the markets and the availability of highly skilled and experienced people to do the training.

The MKI-DS tracer studies reflect the value of this configuration and provides encouragement to the government, in cooperation with the business sector, to attempt to make the changes needed to form a cohesive system.

### ***Weaknesses that Remain***

Despite the evidence that the MKI-DS has a positive effect on graduates in terms of attitudes and qualifications related to work, finding and keeping work, studying further, seeing themselves as having multiple options and improving their ability to negotiate for jobs with higher quality, neither MKI-DS nor similar dual-system approaches can be seen as a panacea for all ills.

The tracer studies show clearly that the positive effects of the approach are more significantly felt by urban men than by either rural men or women in general. Urban women do, however, benefit more than rural women who have the least return on investment with regard to MKI-DS. Women and men have different attitudes to work, and these attitudes are shaped by different influences and expectations. Women have not yet replaced the concept of the centrality of marriage and motherhood with other possible career-centred or dual-centred concepts. Women have fewer expectations and achieve less than men (Langsten and Hassan 2009) – in the context of MKI-DS, too.

In addition, the impact of an approach like MKI-DS is not immune to the vagaries of economic conditions. Nevertheless, MKI-DS has shown considerable promise in bridging the gap between school and work because of what must be assumed to be a cyclical global economic decline. There is sufficient evidence to indicate that the approach not only means that graduates have more labour market-related options but that they gain a level of confidence which is likely to have short- and medium-term effects on interactive employability and longer-term effects on the quality of jobs in Egypt as well as the labour market in general.

## **Conclusions and Recommendations for Future Research and Practice**

The Egypt National Action Plan for Youth Employment for 2010–2015 calls for a reduction in youth unemployment to 15% by 2015. In order for this to be achieved, the TVET system must be, i.a., more demand driven; the link between education and work strengthened. Both, the findings of the tracer study and the steps currently being taken by the government to introduce more dual system approaches, suggest that the combination of work and learning is the direction best suited to TVET in Egypt. It is recognised that MKI-DS has raised the level of relevance and quality of the technical education and training system in Egypt.

Some conclusions and suggestions for future innovations, future research and practice are:

- If the MKI-DS is to be scaled up, questions regarding the overall TVET strategy in Egypt has to be answered. Starting with how to go with expansion (number of potential employers and training places available; filling out the geographic structure of MKI-DS; focus on expanding employment for women and/or along sector lines with special emphasis to economic growth sectors; including SMEs and more informal business entities, etc.).
- Furthermore, it is important to strengthen the financial base of MKI-DS. Detailed information on MKI-DS expenditures on the public and private side is needed for transparency and accountability for its results.
- The media, in particular, television and other forms of visual communication, could play a more constructive role in shifting cultural perceptions about the role of women, particularly in rural areas where TV is a major source of information.
- The significant difference between urban and rural impacts needs to be addressed looking at appropriate workplaces, quality of formal schooling and cultural considerations, as well as involving more intensively the business sector.
- The success of the direct involvement of the private sector suggests to strengthen and expand it: in curricula development, training, monitoring and through providing state-of-the-art equipment in the workplace and sharing the financial burden of technical education.

- While there is a need for greater coherence in the education system, this should not prevent innovative variations from which everyone can learn. This assumes enhanced and functioning quality assurance and national accreditation system.
- The impacts emerging from MKI-DS related to work culture and vocational identity, breaking through the control-fear symbiosis to create the possibility of real negotiation around job quality, should be seen as an integral part of the approach.
- This might mean including specific learning modules around these issues, ensuring that curricula reflect and workplace trainers recognise their importance.
- More (comparative) tracer studies need to be done between the MKI-DS approach and others so that the best features of each, and those that produce the best possible labour market integration outcome, can be combined.
- Evaluation capacities within the MKI-DS structures to be strengthened as part of developing a learning culture to promoting evidence-based policy development and management surrounding technical education.

## Abbreviations

GTZ	German Technical Cooperation
LE	Egyptian pounds
MKI-DS	Mubarak-Kohl Initiative for Dual System
MoE	Ministry of Education
NC-HRD	National Center for Human Resources Development
OECD	Organisation for Economic Co-operation and Development
PPP	Public-private partnership
PVTD	Productivity and Vocational Training Department
RUDS	Regional Units for Implementing the Dual System
TSS	Technical Secondary School
TVET	Technical and vocational education and training
VET	Vocational education and training

## References

- Adams, A. V. (2007). *Helping youth to make the transition from school to work, development outreach*. Washington, DC: World Banks Institute.
- Amer, M. (2007): *Transition from education to work* (Egypt Country Report). ETF Working Document, Turin
- Amry, S. (2008). *Culture and the perception of work and work ethics in urban Egypt/CAIRO*, GTZ/MKI-vetEP, August 2008.
- Amry, S., & Augat, J. (2008). *Culture, perception of work and work ethics in upper Egypt/Qena – work in progress*, GTZ/MKI-vetEP, November 2008.

- Assaad, R. (2008). *The dynamics of decent work in Egypt*. PowerPoint Presentation, Population Council, July 2008.
- Bas, D. (1989). On-the-job-training in Africa. *International Labour Review*, 128(4), 485–496.
- CID Consulting. (2007). *Mubarak Kohl tracer study of graduates*, July 2007.
- CID Consulting. (2009a). *Graduate tracer study and attitudes of youth: Towards the labour market in context of the wider landscape of TVET in Egypt: Track I*. Graduate tracer study, Final report, March 2009.
- CID Consulting. (2009b). *Track II. Overview of TVET in Egypt*, Final report, April 2009.
- EHDR. (2009). *Draft version: “Egyptian human development report 2009”*, Chapter on TVET and Youth, May 2009.
- El Mahdi, A., & Rushdy, R. (2007). *Informal labor and role of technical education and training for youth in Egypt*. PowerPoint Presentation, Population Council, Paris, November 2007.
- Grunwald, E. (2008). *Public-private partnership models in TVET and their impact on the role of government*, GTZ for ADEA 2008.
- Grunwald, E., Lotz, G., Nitschke, K., & Sakr, N. (2009). *Vocational education and training in the context of labour mobility – country report Egypt*.
- GTZ/MKI-vetEP. (2008a). *Job quality as an issue in the Egyptian youth labour market*, December 2008.
- GTZ/MKI-vetEP. (2008b). *Workshop Report: Culture, perception of work and work ethics in upper Egypt*, November 2008.
- Langsten, R., & Hassan, T. (2009). *Education transitions in Egypt: The effects of gender and wealth*, Social Research Center.
- Ministry of Education. (2007). Ministerial Decree No (62)/01.03.2007.
- Ministry of Manpower Egypt Youth Employment National Action Plan. (2010–2015).
- OECD. (2007). *African economic outlook – Egypt 2007*.

## Chapter 22

# Accelerating Artisan Training: A Response to the South African Skills Challenge

Salim Akoojee

### Introduction

Skills development is critical to South Africa's development. It has been argued that South Africa's twin post-apartheid challenges, poverty and unemployment (RSA 2008; ANC 2009), require a level of skills development not undertaken before. Successive national, social and economic development initiatives since 1994 have sought to resolve this deficit. These include the Reconstruction and Development Programme (RDP), the Growth, Employment and Redistribution (GEAR) policy in 1996 and the Accelerated and Shared Growth Initiative for South Africa (AsgiSA) since 2004, with its skills development component, the Joint Initiative on Priority Skills Acquisition (JIPSA). The Human Resource Development Strategy for South Africa (HRD-SA) (RSA 2009) which seeks to consolidate previous initiatives while ensuring a 'coordinated' and integrated response to the provision of scarce skills in the country provides an important backdrop to the current impetus for skills development. This is incorporated in the government's latest 'New Growth Path Framework' (EDD 2010) This is designed to ensure some degree of synergy between economic and social imperatives and suggests, crucially, that skills development is a significant component of the current employment and growth path for a postrecession global order.

With regard to skills development, there is an overall sense in these national documents that while much has been done to resolve skills deficits, much more

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can be done to realise national objectives. This chapter explores one such initiative to respond to the skills crisis – the Accelerated Artisan Training Programme (AATP), an innovation that, when expanded, has potential to increase the numbers of qualified artisans in the manufacturing sector than is the case if it were to be done conventionally. It explores the rationale for, the implementation of and the potential and challenges of the programme. In particular, it assesses the results of a review of the programme by a group designated to evaluate the successes and challenges of the intervention.

This chapter begins by locating the need for the programme within the context of the skills development challenge facing the country. This is followed by an overview of the accelerated training intervention. Thereafter, some successes and challenges identified by the review panel are explored, and lessons for the project's success are evaluated.

## South African Skills Deficit

Skills development has been intricately linked with the national development challenge in South Africa. Unfortunately, the twin challenges of poverty and inequality is underscored by severe unemployment. Unemployment, for instance, ranges between 25.2 and 32.7% at the second quarter of 2010 (Stats SA 2010).<sup>1</sup> The issue of skills development has been identified as a significant constraint on responding to key developmental considerations. The skills development effects of these challenges are evident. McGrath and Akoojee (2007) have pointed to the 'seriously dysfunctional' nature of the skills development system as a legacy of the apartheid system in 1994. Three major problems were identified. First, the racialisation and gendered nature of the skills development system resulted in black people (especially females), either being denied access or being exposed, to opportunities for the development of their skills. Second, the privatisation of key state institutions and the 'abandoning' by the state of the responsibility for intermediate skills development was exacerbated by the 'possibility for tripartism . . . almost non-existent in one of the most conflictual industrial relations systems in the world' (*ibid*). Third, South Africa's apartheid-driven industrial development path had led to an intense polarisation of skill between high- and low-skill elements, with a serious underdevelopment of the intermediate skill segment essential to successful industrialisation and economic competitiveness (McGrath 2004).

The current national context, however, suggests that there is ample need for the review of the human resource capacity and role of skills development in its response. The much cited report on post-school education and training study (see

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<sup>1</sup>The lower figure is the official 'narrow definition', while the higher figure includes those who have not been employed in the two weeks prior to the survey and those that have been discouraged from seeking work.

**Table 22.1** Persons in the 18–24 age cohort not attending an educational institution, not employed and not severely disabled (Source: From Cloete 2009: 35)

Age	Total population	Number not in education, not employed and not severely disabled	Percentage of population in age group not in education, not employed and not severely disabled
18	1 002 363	241 056	24.0%
19	964 195	306 333	31.7%
20	981 625	393 441	40.1%
21	990 984	455 434	46.0%
22	961 272	474 501	49.4%
23	914 732	464 119	50.7%
24	943 195	478 587	50.7%
<b>Total</b>	<b>6 758 366</b>	<b>2 812 471</b>	<b>41.6%</b>

Table 22.1) referred to a considerable number of youth that were outside of the post-school education and training system and labour market. In 2008, around 2.8 million youth aged 16–24, were ‘not in education, training or employment’ (referred to as NEETs), were at risk of being permanently left outside of the labour market if nothing was done.

The average of a little over 40% of the population in the 18–24-year cohort are NEET means that there is an opportunity to provide skills to enhance their productive capacity. While more information still needs to be obtained about whether they would be willing, or able, to undertake artisan skills training, the reality of a potential human resource pool from which to draw to resolve key national skills development challenges exists.

Thus, the twin challenges of widespread skill deficit and youth unemployment loom large as national development priorities. While it is evident that the neat fit of the one responding to the other is a complex one, the need to resolve this challenge is urgent. However, the immediate need of the economy and the urgency of the skills deficit mean that it cannot be simply resolved in absence of a longer term and, perhaps more systemic, youth unemployment challenge. While it is perhaps necessary or desirable to think that one can solve the other in the medium to longer term, the nature of skills acquisition and the time lag between entry into training and work-ready employment participation mean that the challenge will need a more systemic medium- to longer-term implementation plan. Any quick fix solution of resolving skills deficits while at the same time ensuring a more sustained response to the youth unemployment equation is perhaps less likely. While the tension is sometimes resolved by inserting a youth unemployment perspective to the skills-deficit challenge, the success of such initiatives is likely to be muted outside the context of a comprehensive economic and employment framework.

## ***Policy Responses***

There is an overall need to synergise education, training and industrial policy in a developing context. This is reflected in national economic policy designed to respond to key developmental challenges. The latest national growth plan, by the Department of Economic Development (EDD 2010), provides an overall context for job creation and growth. As the document asserts:

The New Growth Path starts by identifying where employment creation is possible, both within economic sectors as conventionally defined and in cross-cutting activities. It then analyses the policies and institutional developments required to take advantage of these opportunities.. (EDD 2010: 6)

Employment creation is clearly a driver for sustained development, and the document makes reference to a range of initiatives designed to achieve these. Skills development is one of the ten programmes, within the micro-level (together with macro- and stakeholder commitments) drivers for change, which includes, inter alia, industrial-, rural-, competition- and enterprise-based development considerations. The proposal calls for ‘Stepping up education and skills development (and suggests that) . . . Improvements in education and skill levels are a fundamental prerequisite for achieving many of the goals in this growth path’ (EDD 2010: 20). Key to this goal is the priority for the training of 30,000 engineers by 2014 and 50,000 additional artisans by 2015. The central role of the SETA in achieving this goal has been emphasised. Thus, SETAs are expected to agree on the ‘. . . numerical targets for completed apprenticeships, with systems to track progress, particularly in construction, mining, manufacturing and new industries such as in the green economy’ (*ibid*). It also calls for a review of the apprenticeship system to enable ‘broader’ access. The specific call in the latter suggests that the current system is in need of review.

The document also continues the substance of earlier policy proposals directed at national development – the Human Resource Development Strategy (HRD-SA). The latter which sets the context for skills development provides a rationale for skills development in a national human resources framework and forms the basis for skills development that goes beyond economic rationale. It suggests that the country should take account of the historical challenges including race, class and inequity, pointing out that ‘The history of South Africa and the persistence of residual prejudices and inequalities compel us to always be vigilant of issues related to values, good citizenship and an explicit commitment to wider development objectives’ (RSA 2009: 10).

In addition, the Department of Trade and Industry’s National Industrial Policy Framework (DTI 2009) makes the following point about the importance of skills in achieving industrial policy objectives:

. . .the skills and education system form a fundamental pillar for the success of an industrial policy. There is currently insufficient integration between industrial policy objectives and skills in the education system. There is therefore a need from much closer alignment between industrial policy and skills and education development, particularly with respect to sector strategies. (DTI 2009: 24)

This is reinforced by the same Department's second Industrial Policy Action Plan (DTI 2010), which provides an important rationale for skills development within specific industrial policy imperatives.

These proposals are complemented by the fiduciary context. The Medium Term Strategic Framework (The Presidency 2009), which is meant to guide planning and resource allocations of the various government entities, plans with, 'The main aim would be to increase the number of skilled personnel in the priority skills areas such as design, engineering and artisanship categories that are critical to manufacturing, construction, cultural activities and other priority economic sectors . . .' (*ibid*, p. 27).

These policy documents reflect the concern and importance given to skills at the highest level in national policy and point to its critical role in national development.

## **The Challenge of Artisan Development**

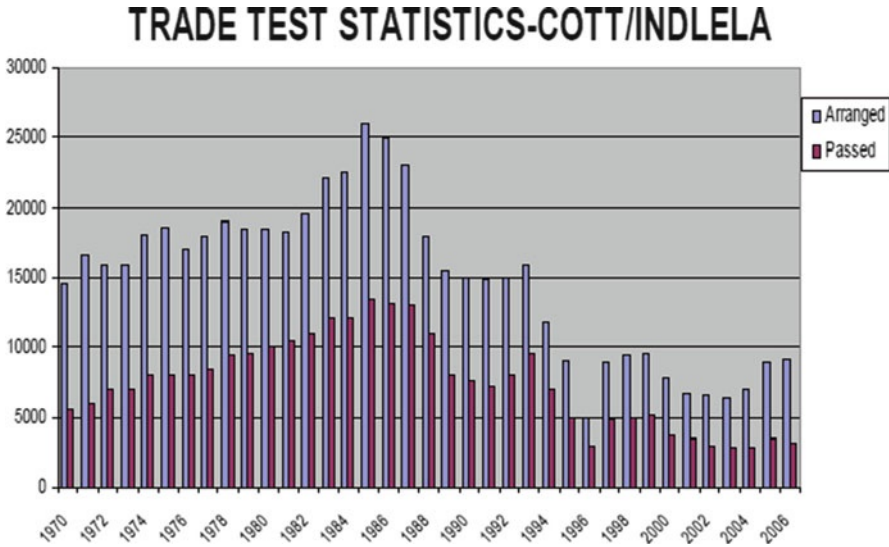
### ***The Challenge Identified***

Artisan development is crucial to the drive for effective skills development. The term artisan refers to a series of 'intermediate level knowledge and skills [ . . . ] held by workers in the craft and artisanal trades, where knowledge is a combination of theory and practice and the emphasis is on the practical rather than the conceptual' (CDE 2007). Key professions like millwrights, electricians, plumbers, boilermakers, mechanics, fitters and turners, pattern makers, and injection moulders are included in this category. The lack of artisan supply is clearly one of the results of a system that was seriously dysfunctional. The reason for the shortage of artisans since the 1990s has been exacerbated by a range of factors including the partial privatisation, and subsequent withdrawal, of state-owned enterprises (SOEs) from the large-scale training of artisans. In addition, an (under)estimation of the trajectory of economic growth, and the miscalculation about which sectors would grow, was also lacking (see Bird 2001, for an exposition of these).

Estimates suggest that while there were 33,000 apprentices registered in South Africa in 1975, this had declined to only 3,000 at the turn of the millennium in 2000. Trade test statistics, as a key element of artisan supply, reinforce this situation (see Fig. 22.1 below).

The steady decline in tests arranged, and in those succeeding, provides a picture of the deterioration of the artisan skills supply. By the mid-1990s, there was a serious crisis that is only now beginning to be resolved. This is compounded by the problem of an ageing workforce, which according to one report estimates that more than 70% of currently employed artisans will exit the labour force over the following 5–6 years (Erasmus 2008).

It was not surprising, therefore, that the Joint Initiative in Priority Skills Acquisition (JIPSA), a component of the Accelerated and Shared Growth Initiative (AsgiSA), pronounced that skills development was a 'binding constraint'



**Fig. 22.1** National Trade Test Statistics: tests arranged and passed (Source: From Prinsloo 2008 (\*COTT was the former Centre for Trade Test which was renamed, Indlela))

to economic growth and development. The specialist task group designed to propose resolution of the issue required that artisan production needed to increase significantly. In order to meet a projected demand of 30,000 over the period 2007–2010, the country needed to increase its supply by about 12,500 per year over the period (from its current average of about 5,000 per year in 2007). In JIPSA's view, this was both a 'conservative estimate' (of needs) and 'a stretch target in terms of South Africa's current capacity to produce artisans' (PCAS 2007). This policy context was the basis of the accelerated artisan programme.

### *The AATP*

In the current conventional arrangement for apprentice training and trade test qualification, the South African skills development training system proposes the following three learning pathways to artisan status.

First, school leavers with a Senior Education Certificate (Matriculation Exemption) (12 years) enter a Further Education and Training (FET) College and complete two levels of engineering-related subjects, as part of the NATED curriculum.<sup>2</sup> Each level comprises four subjects which includes 'Engineering Mathematics'

<sup>2</sup>NATED programmes refer the National Education Department Curriculum currently being phased out and which preceded the current National Curriculum Vocations (NCV) introduced in 2008.

and 'Science'. Candidates then enter into a contract (referred to as an indentured apprenticeship) with a 'workplace-approved' employer for a period of 3–4 years. In this learning pathway, the approximate time for completion is a minimum of 5 years post-schooling. Current pass rates, however, estimated at 30%, mean that the throughput and pass rate is much longer than is necessary (DoL 2008).

Second, school leavers with a General Education Certificate (9 years) enter a Further Education and Training College and complete two levels of the NATED Engineering curriculum. The approximate period for completion of the trade test for those that enter through this route is a minimum of 6 years.

Third, school leavers who have completed a Technical Education Certificate with the appropriate subject choice are theoretically likely to complete their apprenticeship trade test within 4–5 years.

Under this current pathway, the eventual success of an artisan from inception to trade test could easily take at least 5–6 years. There is therefore need for a much more efficient pathway to increase the artisan pipeline. The Accelerated Artisan Training Programme (AATP) was introduced in 2007 as one of the flagship projects by Manufacturing, Engineering and Related Services Sector Education and Training Authority (merSETA) as a way of increasing the artisan training pipeline.

As one of the Sector Education and Training Authorities (SETAs) established in 2000, under the Skills Development Act (RSA 2008) to resolve skills needs, the SETA has been tasked with providing a framework for the artisan skills challenge. In addition to other mechanisms for training, the Accelerated Artisan Training Programme (AATP) was designed as a pilot project to enable a much more efficient response to the artisan shortage.

In its design, the AATP condenses the apprenticeship learning pathway through a 2-year period. The first 26 weeks (6.5 months) represent a structured institutional training period, followed by 54 weeks (13.5 months) of structured workplace training under tutelage. This clearly had the benefit of reducing the period of training by a third. The AATP programme, therefore, marks a significant change from the conventional programme structure.

The project has currently enrolled 2,194 learners to date, from inception in July 2007 in the motor and metals sectors. More than two-thirds of the intake (70%) in the AATP is dominated by boilermaker, electrician, fitters, welders and millwrights apprenticeships. The current phase of the AATP is likely to be completed in March 2011, with an intended target of 5,620 learners by the close of the project.

## Midterm AATP Review

The findings of a project review undertaken in the course of 2009/2010 provide insight into the effectiveness of the project and make some pertinent reflections into the key challenges faced by the project. It provided feedback into the design, composition, function, institutional model and potential future positioning of the project. The review panel comprised a group of seven skills development specialists

selected on the basis of their understanding of artisan training and ‘... have no direct involvements or investment in the AATP’ (merSETA 2010: 3).

The review panel adopted a logical framework model approach, which allowed an examination of the relationship between the different elements of the programme, i.e. objective, inputs, process, outcomes and impacts. It provided an insightful lens by which to understand key features of the project. Key features include findings related to programme effectiveness, curriculum and learner responsiveness and consideration around delivery partners.

### ***Programme Effectiveness***

Employers involved in the programme agreed that the quality of artisans being produced by the AATP exceeds those produced through the 4-year apprenticeship. The training was considered to be well rounded, and companies felt that where they were able to retain the graduates, they would have the potential to develop them further and that their productivity was likely to be optimised. The greatest success of the AATP is around model building. It makes training more attractive to companies through effective management and administration.

It was felt that despite a relatively small project management team, the programme was well managed with strong communication and a high level of trust, reinforced through the monthly project meetings. In particular, the separate, evidence-based grant payment and tracking system with clearly defined timelines and tracking was much more comprehensive than the traditional apprenticeship approach which was likely to create lead to greater throughput.

It was found, however, that the programme faced significant scepticism towards the efficacy of an accelerated model and resulted in resistance in some workplaces. There was, therefore, some disquiet that AATP graduates might not be sufficiently competent after trade testing and may require at least another 2 years of on-the-job experience for full artisan proficiency. The challenge in overcoming preconceptions about the lower quality of artisans produced as a result of the acceleration was a significant stumbling block in ensuring stakeholder buy-in.

### ***Curriculum Responsiveness***

With regard to curriculum renewal in the AATP, the project team identified that the key consideration of curriculum renewal has not been resolved in the project. They pointed out that

The curriculum for the apprenticeship was not addressed and many of the fundamental flaws underlying the curriculum persist, in terms of structuring of knowledge, sequencing and articulation. (merSETA 2010: iii)

While there is a clearly articulated need for curriculum renewal, the nature of the programme as conceived needs to take on board current curriculum models to enable effective acceptance. Clearly, the fact that Sector Education and Training Authority are charged to model innovation, they are at the same time required to ensure that artisans are produced and the pipeline effectively fed. It is likely that innovative curriculum development potential might be muted in pursuit of a target driven system requirement.

The multiple project objectives of national and institutional responsiveness are clearly not compatible. Responding to all of the prerogatives of curriculum renewal, national scarce skills requirement (apprentice shortages), youth unemployment and SETA objectives (reaching learner targets) mean that some of the more urgent and systemic issues cannot be resolved. The issue of curriculum and learner responsiveness is not particularly new. The South African Minister of Education made reference to both curriculum and learner responsiveness as in the call for public FET colleges to

....develop the capacity to offer greater support to learners, innovative partnerships with business, industry and communities and an even more responsive and flexible curriculum. Failure to address these imperatives will result in colleges remaining mere aggregations of what existed before. (Asmal 2002: 7)

Despite this call, however, very little has been achieved. In addition, the issue of curriculum renewal has been articulated as a significant component of TVET provisioning in sub-Saharan Africa. Gichira (2002) has noted a widespread need for TVET curriculum renewal and has observed that ‘The impact of training on development in Southern Africa is diluted by lack of relevance to the skills which are needed in the labour market and the poor quality of existing training programmes’ (p. 2).

### ***Learner Responsiveness***

The review committee pointed out that inadequate attention was paid in the programme to unique learner needs. As the panel remarked, ‘The program does not cater for different learner needs, does not adequately address lifeskills, and there is insufficient engagement between the project team and learners on the ground’ (merSETA 2010: iii).

To some extent, learner responsiveness was a particularly important element of the project design. That this was referred by the project team means that much more attention needed to be paid to learners on the programme. Much attention was paid by the project team to the kinds of learners selected for the programme. The learner selected for the programme, in addition to engineering-related qualifications, also had to respond to equity criteria; black and female candidates were preferred. Thus, learners who had completed the college-level NATED curriculum (from level 3

upwards) and those part-graduated from the New Vocational Curriculum introduced and had not had the necessary workplace experience component of their training were given preference over others.

This neglect of learner needs in the TVET context is not unusual. Unwin (2003) refers to it as the missing ingredient that will need to be given significant consideration if the system is to be revived.

While it would be necessary for the AATP to insert a more deliberate student support agenda, its success in this project context is likely to be muted in the context of the numbers that are to be delivered (see above). The resource limitation precludes the necessary expanded support necessary for its achievement.

### *Delivery Partners*

The review committee reported that the AATP project relied far too much on large companies and private providers. The project team had the following to say about this:

The AATP is dominated by private providers, largely to the exclusion of public FET Colleges . . . In addition, while providers appear to have good working relationships with larger employers, there is a challenge around how providers work more effectively with small and medium enterprises. (merSETA 2010: 3)

The concern that the project was neglecting both public providers, referred to as Further Education and Training (FET) Colleges, and smaller companies is not unusual in the context of the project design. The project objectives did not articulate the importance of partnerships with public institutions for two important reasons: First, the focus on numerical learner targets encouraged use of the most efficient, rather than the most nationally relevant, delivery partner (public FETs). Second, the previous national skills development strategy, although it advocated using public providers, understood the complexity of utilising them. Importantly, the project was conceptualised at a time when public FETs were not able to engage industry training initiatives. Further, the Department of Education, responsible for FET Colleges, was not particularly supportive of industry engagement.

The use of public Further Education and Training institution has of recent increasingly come to be recognised as more significant (see, for instance, Atchoarena and Delluc 2002; Oketch 2007). Only recently have they been accorded some degree of importance in South Africa. The discussion document of the National Skills Development Strategy III published for comment in 30 April 2010, under the newly created Department of Higher Education, pointed out the importance of this sector by asserting that ‘. . . whilst historically the public providers were junior partners on the skills development agenda, they are now centre stage and the need to equip them to play their new role is an urgent national priority’ (DHET 2010: 9). While it would be important for public providers to be given precedence in the project in its quest for expansion in the new order, the reality is that quality in the sector

is far from adequate (see Akoojee 2009) and current provisioning will need to be improved if they are to make a meaningful contribution to project objectives.

With regard to the link with larger, as opposed to smaller, enterprises, the need to meet learner targets efficiently means that it is unlikely to be achievable. While there has been evidence to suggest that more concerted attention need to be paid to the training needs of small and micro enterprise as employment opportunities in larger enterprises decline (see, for instance, King and McGrath 1999; Badroodien 2005), the reality of implementing a programme so closely tied to learner targets means that it is likely to take the path of least resistance.

### ***Overall Benefits and Challenges***

In general, the project benefits were broadly acknowledged. First, the advantage offered to employers to recruit and train on a 'just-in-time' basis, at subsidised and marginal cost, was an important feature of the project. The potential transformative impacts of ensuring that candidates are selected from disadvantaged groups offer an important opportunity for redress. Second, the likelihood of a significantly expanded success rate for certification (i.e. first attempt trade test passes) has been touted as an important component of the overall project.

There is, of course, greater likelihood of employment outcomes after the programme as a result of employer participation. The partial financial contribution of employers to the programmes secures a degree of involvement and interest in ensuring success. The support provided by the project team also enhanced success and served to remove bottlenecks.

There are, however, important challenges that have been articulated. First, the international economic recession has negatively impacted employer uptake and commitment to the program. Second, if the programme is to be expanded, there is need to examine the way in which more learning pathways could be built that will support the quantitative increase in participants to make real and tangible the impact of the programme so that it is able to contribute to the national development project. Third, the nature of the national challenge means that this initiative is one of a range of initiatives needed in order to respond to the wider artisanal challenge in the country. The key consideration is that companies essentially need to take the responsibility for ensuring a steady pipeline of skills to ensure their sustainability. This is still an elusive prospect in the South African context.

### **Conclusion**

Skills development is crucial to responding to the twin challenges of poverty and unemployment. While it is clear that skills by itself will not resolve the national development challenges, the reality that without a determined systemic

skills development system, the possibilities for national development are that much more elusive. In South Africa, the reality of skills development is much more urgent in light of the various national development challenges of unemployment and the lament for effective skills, which serves as a 'binding constraint' to growth. More importantly, this is done in the context of significant youth unemployment, described as a 'time bomb', which if not resolved may lead to significant negative social impacts.

In a context of these challenges, initiatives like the accelerated artisan programme are not only important but represent a critical means by which to resolve key national development challenges. The problem, of course, is that the urgency of the challenge requires us to 'fix the problem while it is happening'. And in spite the time lag required for skills acquisition, there is an urgency to ensure that historical deficits are resolved.

Thus, despite some significant strides, the AATP is hamstrung by the real need of the time – the production of artisans in the context of system redress. The country is at the same time required to produce artisans at the same time that it attempts system review. There is an ever-present need to respond to a range of equity imperatives, including the training of youth, particularly black and female. This needs to be achieved in the context of structural constraints of a public TVET system, not particularly allied to the labour market. It is thus likely to falter on one, or the other, prerogatives. The incubation period necessary for its innovative potential is, therefore, likely to be muted.

The AATP has, nevertheless, been widely lauded as an innovation that has succeeded in its goal of accelerating the training of artisans in the manufacturing sector. In response to the crisis of skills development in the country, its success in encouraging companies to secure apprenticeship opportunities has been recognised. The project has revealed that there are numerous challenges to which the skills development system is expected to respond, and there is no quick fix panacea. The reality is that it is not likely to resolve deeper structural skills development dilemmas occasioned by years of apartheid neglect, abandon and exclusion.

## References

- Akoojee, S. (2009). Scarce skills and public TVET in South Africa: Twin challenges or two sides of the same coin! *Southern Africa Review of Education (SARE) and Education with Production (EWP)*, 15(2), 117–138.
- ANC (African National Congress). (2009). *Election manifesto: 2009*. African National Congress, Available at [http://us-cdn.creamermedia.co.za/assets/articles/attachments/19266\\_policy\\_framework.pdf](http://us-cdn.creamermedia.co.za/assets/articles/attachments/19266_policy_framework.pdf)
- Asmal, K. (2002). Foreword by the minister of education. In L. Powell & G. Hall (Eds.), *Quantitative overview of the further education and training college sector*. Pretoria: Department of Education.
- Atchoarena, D., & Delluc, A. (2002). *Revisiting technical and vocational education in Sub-Saharan Africa: An update on trends, innovations and challenges*. Paris: UNESCO and IIEP.
- Badroodien, A. (2005). Enterprise training in post-apartheid South Africa. *Journal of Education and Work*, 18(1), 85–110.

- Bird, A. (2001). *National monograph on technical and vocational training in SA*. Geneva: ILO.
- CDE (Centre for Development and Enterprise). (2007). *The struggle for jobs: Evidence from the South African young person's survey*. Johannesburg: CDE Focus 13.
- Cloete, N. (Ed.). (2009). *Responding to the educational needs of post-school youth: Determining the scope of the problem and developing a capacity-building model*. Cape Town: CHET.
- DHET (Department of Higher Education and Training). (2010). *Framework document for the national skills development strategy III*. Pretoria: Government Printer.
- DoL (Department of Labour). (2008). *Research consortium for artisan trades, scarce and critical skills project, March 2008*. Research commissioned by the Department of Labour, South Africa. Available at [http://www.labour.gov.za/downloads/documents/research-documents/Artisans%20trades\\_DoL\\_Report.pdf](http://www.labour.gov.za/downloads/documents/research-documents/Artisans%20trades_DoL_Report.pdf)
- DTI (Department of Trade and Industry). (2009). *National industrial policy framework*. Pretoria: Government Printer.
- DTI. (2010). *The industrial policy action plan II (IPAP II)*. Pretoria: DTI; Government Printer.
- EDD (Economic Development Department). (2010). *The new growth path: The framework*. Downloaded from, <http://www.info.gov.za/view/DownloadFileAction?id=135748> on December 13, 2010.
- Erasmus, J. (2008). *Scarce and critical skills verification report: Project 4.1: A multiple source identification and verification of scarce and critical skills in the South African Labour Market*. Pretoria: HSRC/Department of Labour.
- Gichira, R. (2002). *Training for survival and development in Southern Africa, Paper read in Oslo, November 14–15, 2001*. Downloaded from [http://nnuc.evtek.fi/tvet\\_seminar\\_02/Gichira%20-%20Kenya%20Ensuring%20relevance%20and%20quality%20in%20TVET%20and%20EE.pdf](http://nnuc.evtek.fi/tvet_seminar_02/Gichira%20-%20Kenya%20Ensuring%20relevance%20and%20quality%20in%20TVET%20and%20EE.pdf) downloaded 041007.
- King, K., & McGrath, S. (Eds.). (1999). *Enterprise in Africa: Between poverty and growth*. London: Intermediate Technology Productions.
- McGrath, S. (2004). Introduction: The shifting understandings of skill in South Africa since industrialisation. In S. McGrath, A. Badroodien, A. Kraak, & L. Unwin (Eds.), *Shifting understandings of skills in South Africa*. Cape Town: HSRC Press.
- McGrath, S., & Akoojee, S. (2007). Education and skills for development in South Africa: Reflections on the accelerated and shared growth initiative for South Africa. *International Journal of Educational Development*, 27, 421–434.
- merSETA. (2010). *External review of the accelerated artisan training programme (AATP)*. Johannesburg: merSETA.
- Oketch, M. (2007). To vocationalise or not to vocationalise? Perspectives on current trends and issues in technical and vocational education and training (TVET) in Africa. *International Journal of Educational Development*, 27, 220–234.
- PCAS (Presidency of the Republic of South Africa). (2007). *Development indicators: Mid-term review*. Pretoria: Government Printer.
- Prinsloo, F. (2008). *Mining qualifications authority: Co-sector accelerated artisan development*. Paper delivered at IAC, Downloaded from <http://www.iacsouthafrica.co.za/documents2008/Prinsloo%20MQA.pdf>. Mining Qualifications Authority.
- RSA (Republic of South Africa). (2008). *Skills development amendment act*. Pretoria: Government Printer.
- RSA. (2009). *Human resource development strategy for South Africa 2010-2030*. Pretoria: Government Printer.
- Stats SA. (2010). *Quarterly labour force survey, 2010, Quarter 2 dataset*. Available (online): <http://www.statssa.gov.za>
- The Presidency. (2009). *Medium term strategic framework: A framework to guide government's programmes in the electoral mandate period 2009–2014*. Downloaded from <http://www.wsu.ac.za/campuslife/indaba/documents/2009%20-%202014%20Governments%20Medium%20Term%20Strategic%20Framework.pdf> on December 20, 2010.
- Unwin, L. (2003). Being responsive: Colleges, communities and 'stakeholders'. In M. Cosser, S. McGrath, A. Badroodien, & B. Maja (Eds.), *Technical college responsiveness: Learner destinations and labour market environments in South Africa*. Cape Town: HSRC Press.

## Chapter 23

# The Role of Social Partners and the Status of Apprenticeship in Turkey

Özlem Ünlühisarcıklı and Arjen Vos

### The Place of Apprenticeship in Education and Training in Turkey

The present education and training system profits both from a long tradition of apprenticeship training, in which its roots go back to as early as the thirteenth century, and from the existing structure of employer organisations and trade unions. Nowadays, social partners are recognised as key players in the development of vocational education and training (SVET 2007).

The population of Turkey is about 72.5 million, and about half of the population is under the age of 28.8 (TurkStat 2010). Having a rather young population, the educational system serves to large numbers of students and adult learners. By the Basic Law on National Education No. 1739 issued in 1973 (Articles 40, 41 and 42), Turkish education system is divided into formal and nonformal education, and the main responsible body is the Ministry of National Education (*Milli Eğitim Bakanlığı*, MoNE). Formal education covers preschool education, primary education, secondary education and higher education (Higher Education Council is the responsible body). In 2008–2009 academic year, in the formal education system, there are about 10.1 million primary school level students, and 3.8 million secondary school level students of which about 1.5 million are vocational and technical education students (Table 23.1). As Table 23.1 reveals, formal schooling drops dramatically after compulsory primary education, and many young people acquire vocational skills through nonformal education. Nonformal education covers

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**Table 23.1** Schools and enrolment by educational level and gender, 2008–2009

Education level	Schools	Female	Male
Primary school	33,769	5,156,049	5,553,871
General secondary school	4,053	1,085,656	1,186,244
Vocational secondary school	4,622	671,567	893,697

Source: MoNE (2009)

all educational activities and institutions intended to satisfy the educational needs of all over the age of 14. The main responsible body for provision of various nonformal educational activities, including apprenticeship training, is the MoNE, General Directorate of Apprenticeship and Non-formal Education (Ünlühisarcıklı 2008).

The first law on apprenticeship training is the Law of Apprenticeship, Journeyman and Mastership No. 2089 of 1977 which provided the opportunity to acquire a profession through apprenticeship training within the Turkish national education system. The law defined the status of apprentices, journeymen and masters; regulations for working hours and working conditions; and social security arrangements and payments. However, the law was considered unclear concerning the status of apprenticeship training being either formal or nonformal (Akpinar and Ercan 2002). In 1986, the Apprenticeship and Vocational Education Law No. 3308 issued (amended in 2001 as Law No. 4702), which organised apprenticeship, formal and nonformal vocational and technical education in an integrated system.

Apprenticeship training targets mainly the 14–19 years old who are primary education graduates that want to acquire a vocation mainly through work at enterprises. In this system, once a week, apprentices go to a training centre; on the other 5 days, they work at enterprises where a mentor called as ‘master trainer’ is responsible for monitoring their work-based development. With the amendments to Law No. 3308 by Law No. 4702 in 2001, training an individual over the age of 19 as an apprentice is allowed. Therefore, those over the age of 19 may also enter apprenticeship training on the condition that they have secondary school diploma.

Apprenticeship training in Turkey is carried out in 31 occupational fields and 153 branches as determined by the 22nd Vocational Training Council. The Law No. 3308 guarantees that companies pay apprentices at least one-third of a minimum salary, while the MoNE provides the social insurance for the apprentices. There are so-called unrecognised occupations that MoNE does not offer any training but allows one of the social partners to do so, which will be covered in the later part of this section.

Organisations that offer theoretical and practical training to apprentices are mainly vocational training centres (*Mesleki Eğitim Merkezi*, MEM) and vocational training and technology centres (*Mesleki Eğitim ve Teknoloji Merkezi*, METEM). Apprenticeship training is not confined only to these centres; at enterprises where there are ten or more students, ‘training units’ may also provide apprenticeship training.

## **Key Delivery Partners of Apprenticeship in Turkey**

In the following, key delivery partners that are vocational training centres, vocational training and technology centres, training units at enterprises and social partners will be explored.

### ***Vocational Training Centres***

In 1979, apprenticeship training centres were established to provide vocational education to candidate apprentices, apprentices, journeymen and master trainers already working in the sector. With the amendments to the law in 2001, these centres are renamed as vocational training centres. When they were first established, there were seven centres. Over the years, their numbers increased, and today, there are 317 centres. Vocational training centres are the major providers of apprenticeship training, and each year, more than 200,000 participants attend these centres. In 2007–2008 academic year, 1,806 candidate apprentices, 140,329 apprentices and 57,356 journeymen attended these centres (TurkStat 2009).

Candidate apprentices are primary school graduates who are already occupied in a workplace but are below the age of 14. They receive theoretical training 1 day a week at a vocational training centre. Those above the age of 14 receive their training at vocational training centres (or at ‘training units’ of workplaces approved by the MoNE) as apprentices 1 day per week. Apprentices receive their practical training at workplaces under the supervision of master trainers for the rest of the week. Depending on the nature of the occupation, time duration of apprenticeship training is either 2 or 3 years. After the training, the apprentices take the ‘experienced apprenticeship exam’ to earn a certificate which leads to journeymanship. Journeymanship training lasts 2 years, and on completion of the training, the journeymen take the mastership examination which leads to mastership certificate. Those who hold a mastership certificate may attend 40 hours of pedagogical training to gain a master trainer certificate. Master trainers are in charge of undertaking the training of apprentices in the workplace. In short, one may start as an apprentice at a vocational training centre while working at a job and go through the steps by first becoming a journeyman, then a master and finally a master trainer.

### ***Vocational Training and Technology Centres***

In some regions, there are also vocational training and technology centres, also called as supra-enterprise training centres (*İşletmelerüstü Eğitim Merkezi*), which function in a similar way to vocational training centres and are run by the Confederation of Turkish Tradesmen and Craftsmen (*Türkiye Esnaf ve Sanatkarlar*

*Konfederasyonu*, TESK) since 1991. The Foundation for the Promotion of Vocational Training and Small Industry (*Mesleki Eğitim ve Küçük Sanayii Destekleme Vakfı*, MEKSA) supports TESK in running these centres. There are 22 such centres which provide training to about 4,000 apprentices and 800 journeymen and master trainers each year. These centres also have different functions than the vocational training centres. They provide in-service training opportunities to the craftsmen, promote the work of small enterprises on the national and international levels, organise vocational courses for the unemployed and contribute to the professional development of skilled employees.

### ***Training Units at Enterprises***

Apprenticeship training may also be carried out at enterprises that meet certain criteria and have the approval of the MoNE. The law enables the establishment of 'training units' at enterprises to provide apprenticeship training when there are ten or more students to be trained. Besides, enterprises that have training units have to appoint a master trainer who has mastership certificate. These master trainers are to be responsible for the apprenticeship training given at the enterprises. When these conditions are met, students may stay at enterprises to get their theoretical training rather than going to vocational training centres or vocational training and technology centres.

### ***Social Partners***

TESK is a tradesmen and craftsmen organisation for manufacturing and service sectors and has been involved in vocational and technical training, more than any other organisation, for the provision of apprenticeship training because the training largely covers occupations that are relevant for the SME sector. Other social partners are not as involved in the apprenticeship system, but have been increasingly involved in the dialogue about education and training strategies since 2001 and are key players in the development of the Turkish qualification framework and qualifications at sector level.

TESK represents more than 90% of the total number of enterprises in Turkey and has nearly 1.9 million tradesmen and craftsmen members. As an umbrella organisation, TESK represents 13 sector occupational federations, 82 unions of chambers in each of the provinces, and 3,483 local occupational chambers (SVET 2006).

Additionally, under the scope of the Tradesmen and Craftsmen Law No. 507, TESK is liable for training, testing and assessment and certification in unrecognised occupations where MoNE does not offer apprenticeship training. About 500 unrecognised occupations are provided by the TESK in fields generally related

with production of goods (glassware, pottery), production of food (production of flour, salt), construction (excavation, drilling), personal hygiene and beauty (wax epilating, manicure and pedicure), transportation (driving), foodstuffs (herbs and spice selling) and services in communication, accommodation and entertainment (estate agency; tourist guiding; running a café, tea house or internet shop; and running a hotel, boarding house or bed and breakfast). These occupations are unrecognised by the MoNE because of their limited scope and specific function on production or service.

Moreover, TESK supports apprenticeship training by allocating funds from the confederation's budget, organising training and giving certificates and improving the quality of vocational and technical training by means of workplace monitoring and advising. In short, TESK has a crucial role, as a social partner, in contributing to the apprenticeship system in Turkey (Ünlühisarcıklı 2007).

There are also other social partners that contribute to apprenticeship training. The Law No. 3308 (Article 4, amended in 2001 by Law No. 4702) also regulates the roles of social partners and enterprises in vocational education system. Social partners participate to the planning, development and evaluation procedures through the vocational training councils organised at national and provincial levels. The members of the council are the representatives of relevant ministries, TESK, various chambers of commerce, confederations of employers and employees and others. Vocational training council functions for making decisions and stating opinions to the MoNE on the planning, development and evaluation of education not only for formal vocational and technical training but nonformal apprenticeship training provided in vocational training centres and practical training attained at institutions and enterprises (Ünlühisarcıklı 2007). Therefore, in general, the awareness of the social partners in Turkey that investing in education and training pays off is well developed. Social partners contribute actively to educational strategy discussions and are the key shapers of the occupational standard sector bodies that are set up under the Vocational Qualification Authority Law No. 5544 in 2006 (Parkes et al. 2009; Demirer et al. 2008).

However, although Turkey has well-established apprenticeship system and programmes, the MoNE acknowledges that the status of apprentices is rather low (SVET 2007). The 'Third Policy Learning Workshop' organised in Kırşehir provided the opportunity to discuss apprenticeship system together with some 40 stakeholders from different directorates of MoNE, provincial directorates, schools and training centres and from social partners in July 2008. This workshop also brought out the issues and challenges of apprenticeship system in Turkey. Some of the main conclusions of the Kırşehir workshop are related to positive aspects of the apprenticeship system: in terms of legislation, the apprenticeship system in Turkey is well developed, and despite the need for technological upgrading, financing of the system is not considered a key problem. However, there are issues which need to be changed like establishing more variation in the time duration of the programmes, delayed entrance into the system as a result of increased years of compulsory education requires adaptation strategies of the apprenticeship programmes and training of teachers and mentors in enterprises needs to be improved.

In spite of the well-developed apprenticeship system, the low status of apprentices is considered as the most burning problem of the apprenticeship system: a large part of apprentices come from lower socio-economic classes and frequently are school dropouts. Also, the status of the certificate is in many occasions not clear or recognised, as normally a mastership certificate is a precondition for opening a small business, but in some sectors and municipalities in practice, business start-ups also take place without such certificate. The apprenticeship system is not well connected to opportunities for further education and training, and working conditions of apprentices in the workplaces can be quite tough (Vos 2008).

## Methodology

As the MoNE recognises and the Kırşehir workshop has shown, the status of apprenticeship is rather low. However, there is no particular study that investigates the underlying reasons from the perspectives of vocational training centre administrators and administrators of unions of chambers that are the main social partners of apprenticeship training and operate under the umbrella organisation of TESK.

This study aims to investigate the underlying reasons of the low status of apprenticeship and the challenges and suggestions to improve this situation. The study is conducted in Istanbul. Istanbul is the largest city in Turkey and has the highest number of apprentices and journeymen attending to vocational training centres compared to other cities. In 2007–2008 academic year, the total number of participants (which covers candidate apprentices, apprentices, journeymen and master trainers) was 33,499 in 19 vocational training centres in Istanbul (TurkStat 2009). In Turkey, there is one tradesmen and craftsmen union of chamber in every province that has their own local occupational chambers. But only in Istanbul, there are two such unions of chambers with their local occupational chambers. Thus, there are 154 local occupational chambers under the Istanbul Tradesmen and Craftsmen Chambers Union and 15 local occupational chambers under the Istanbul Metalwork and Craftsmen Chambers Union that are eligible and responsible for registering and directing the apprentices to related vocational training centres for their training.

A qualitative method has been used in this study, and data is collected through a series of in-depth interviews inquiring the role of social partners and the issues and challenges related to the status of apprenticeship training. The sample was selected through convenient sampling for vocational training centres based on availability. As for the representatives of the unions, purposeful sampling was used, and those who would provide the most relevant information were interviewed. Altogether, three directors and five deputy directors from three vocational training centres and one representative from each of the two unions of chambers were interviewed in May–June 2009 in Istanbul. One TESK representative in Ankara was telephone interviewed. To protect identities of the interviewees, pseudonyms are used in the reporting.

## The Increasing Role of Social Partners in Apprenticeship

Interviews with vocational training centre administrators and social partners reflected similar concerns and issues that were revealed earlier in Kırşehir workshop. The apprenticeship system is considered as ‘the last castle from the abyss’ as one of the directors defined. However, the interviewees also mentioned that provision of employment opportunities is considered as an important prospect despite the low status and difficulties of the apprenticeship system. Also, the administrators believed the name change of the centres from apprentice training centres to vocational training centres contributed positively to the image.

Vocational training centre administrators indicated that the employers are neither enthusiastic nor knowledgeable about the apprenticeship system, and more information collection and promotion are needed. To give an example, in Istanbul, there are about 20,000 registered apprentices, whereas about some 200,000 apprentices work unregistered in the informal sector. With no social security, being disposable workers adds up to the low status of apprenticeship.

A vocational training centre director who had been working previously as a teacher in a vocational high school mentioned the fact that the apprenticeship system is not publicised enough:

Not only the people but teachers working in formal education system do not know about non-formal vocational training. Even myself, I read and learned what it is all about when I started here as an administrator only a few months ago. (Ahmet, vocational training centre director)

Similarly, a director mentioned how the municipal directors of national education are indifferent to the apprenticeship training. As the number of these centres and the attendants is comparatively very small, their attention is focused on the primary schools and their problems rather than the negligible vocational training. For example, one director made the following comment:

Another problem is the municipal director of national education and the departmental chief do not consider us important. Apprenticeship training and these centres are always considered dormant, un-functional institutions. However, the children that come to Vocational Training Centres are the ones who are out-of formal education. Although they are the ones whom we should pay ultimate care, they are the ones who are left aside. A municipal director of national education would visit a Vocational Training Centre occasionally, maybe only once, whereas visits primary schools several times. (Celal, vocational training centre director)

The director explained how they coped with the problem of lack of attention from the local administrators and the problem of publicity of their centres. They tried to make themselves visible by explaining the opportunities they offer to young people through apprenticeship training by visiting local institutions and enterprises:

We prepared a file about our activities and presented to the municipality. We went all local mayors and headmen, and explained. If we couldn't go we send our leaflets . . . We needed to contact with larger enterprises. We tried to open up classes at enterprises instead of bringing apprentices to our centre, we send our teachers to the enterprises. (Celal, vocational training centre director)

The directors, deputy directors and administrators have the opinion that although they provide a very important service to the society by acquiring vocational skills to those who would not continue their education in formal education otherwise, they are neglected and considered as second rate. There is a need to change the opinion of the public about the status of apprenticeship and the value attributed to vocational skills acquisition through apprenticeship as explained by an administrator:

People think of only formal education when the Ministry is concerned. In Istanbul there are only 18 Vocational Training Centre, these numbers should increase. Only lately we started to have our own buildings, earlier our centres were really in bad conditions. The municipal directors of the Ministry need to get to know us better. We would be publicised in the media, it would be on TV or newspapers. Everybody wants to be a university graduate. But acquiring a vocational skill is important and valuable. We need to develop a culture where such skills are appreciated. (Engin, administrator in a craftsmen chambers union)

The image of these centres and apprentices is also low among the teachers themselves as two directors mentioned. Since the students attending to these centres come from lower socio-economic status families and are mostly graduates of primary school with lower levels of school success, teachers do not hold high views of either the centres or students. On the contrary, the directors are of the opinion that the attitude of the teacher and putting high standards and expectations are vital for the benefit of the apprentices. Moreover, related to their disadvantaged backgrounds, apprentices generally have experienced difficult life conditions. In vocational training centres, there are not many social or sports activity opportunities, which is also considered as a drawback as one of the directors explained:

Nowadays teachers want positions in our centres. For instance, it was difficult to find Turkish language teachers two-three years ago. Now they prefer us. Teachers consider here as a place of idleness. They have to prepare extensively for classes in formal primary or secondary schools, but here they just go to the classes. The students don't pass or fail. But, in fact our job here is more difficult. . . . Their peers go to high school. They work 6 days a week from childhood on. They don't participate in any social activity. We don't have a gym. What if they could do some kind of activity . . . They are an unhappy lot, unhappy from the childhood. There are children whose family depend on them for a living. (Hasan, vocational training centre director)

Vocational training centre administrators considered the local TESK occupational chambers as important social partners for contributing to the apprenticeship system. However, the administrators were of the opinion that the involvement of these chambers could be more effective. This is expected specifically in two ways: by providing proper monitoring of the enterprises and by directing more apprentices to vocational training.

Interviews with the representatives from the two unions in Istanbul revealed some difficulties on these issues. The enterprise monitoring and consulting groups (*İşyeri Denetleme ve Danışmanlık Grupları*, İDDG) are fulfilling one of the most important functions of the local occupational chambers for maintaining the quality assurance of apprenticeship training. Accordingly, each İDDG at local occupational chambers monitors and ensures that the apprentices are provided with well-equipped, hygienic and secure training and working conditions. Similarly,

the union enterprise monitoring and consulting group (*Birlik İşyeri Denetleme ve Danışmanlık Grupları*, BİDDG) functions at the provincial level to monitor the local occupational chambers (Yazman 1999). However, the interviewees from the above-mentioned unions reflected that İDDGs do not function well mainly for two reasons: firstly, there are too many enterprises to be monitored, and the İDDGs do not have that many members to be able to do so; secondly, the municipalities – and in the case of sanctions, also the police departments – are not knowledgeable about how the system works, so the enterprises which do not comply with the regulations generally do not suffer the consequences. Thus, ensuring a good monitoring and consulting system is still a challenge for the improved quality and status of the apprenticeship system:

The consulting and monitoring system is not working effectively. Owning a mastership certificate does not have any advantage either. One has to register to the tax office, and needs certificate to do that. However, the tax office does not check whether the person has the certificate or not, just takes the tax. One has to get work permit from the municipality, but it is not checked there either. To register to the local occupational chamber one has to have the certificate, but the Chamber of Commerce had an addendum to its regulations and they do not require it. Like that, their number of members increased from 700 thousand to 1.5 million in just one year. (Kemal, administrator in a craftsmen chambers union)

Therefore, another issue is the low numbers of membership to the local occupational chambers. As indicated by one of the administrators in the above-mentioned quote, most of the small entrepreneurs run their business either unregistered or by becoming a member of the municipal chamber of commerce under the umbrella organisation of the Turkish Union of Chambers and Stock Exchanges (*Türkiye Odalar ve Borsalar Birliği*, TOBB) rather than the local occupational chambers. TOBB, established in 1950, is the highest organisation representing the private sector in Turkey. As an umbrella organisation, TOBB represents 365 chambers and commodity exchanges. TOBB also has a role in supporting vocational and technical training; however, these activities are limited only to the workplaces of their own members (SVET 2006). By an addendum to the TOBB Law No. 5174 (item 102), the requirement of having a mastership certificate is bypassed if the entrepreneur is a member of the municipal chamber of commerce. That provides a short cut to starting up an enterprise. The administrators were of the opinion that this situation in the long run harms the apprenticeship system and status extensively because the apprenticeship and journeyman certificates that lead to mastership certificates which are granted by the MoNE or TESK do not mean much for setting up a business. Therefore, another challenge is holding to the fundamental requirements of the Law No. 3308 and keeping the functionality and credibility of the certificates, as one of the interviewees said:

There is lack of coordination. There should be only one law to be applied by everybody the same way. There is the Law, but not applied the same by everyone. If one is registered to Chambers of Commerce under TOBB, he is not required to have mastership certificate to open up a workplace.... There are also so many people who do not have a certificate, who work unregistered [not registered to municipal Chambre of Commerce either]. It is very tempting, you don't have to pay taxes, and you make apprentices work without social security. (Engin, administrator in a craftsmen chambers union)

As mentioned earlier in this chapter, apprenticeship system would be seen as a career path starting from apprenticeship training that leads to mastership and finally to master trainer level. Therefore, the practices relating to mastership certificate also determine the status of apprenticeship in the society. If there is no practical value of mastership certificate to work or to open up a workplace, then the whole system falters, including the apprenticeship training. The social partners, especially the unions of chambers, are expected to be involved in the process with a stronger presence and authority:

Unions of chambers have the voice in other countries. In Turkey as long as the unions of chambers don't have a greater function things won't work. (Hasan, vocational training centre director)

Overall, the interviewees are of the opinion that the numbers of vocational training centres should be increased; the municipalities and the general public should be better informed on the job opportunities of the apprenticeship and the importance of ensuring high quality. Also, the quality of apprenticeship training would be increased by providing in-service training for teachers, trainers and mentors. Moreover, they indicate a need for sector analysis of demand and supply. At present, half of the apprentices in Istanbul come from barbershops and hairdressing salons, although there is a high demand for apprentices in metalwork industry as the interviewee from the Istanbul Metalwork and Craftsmen Chambers Union mentioned. Labour market analyses should be the basis for planning the supply of apprenticeship programmes in the vocational training centres. This would contribute to the status and the relevance of the apprenticeship.

## Conclusion

The Kırşehir workshop and further interviews revealed some challenges to improve the social status of apprenticeship. The role of social partners in this process is vital. A precondition is that both TESK and TOBB would recognise that only with mastership certificates one can set up an enterprise. The improvement of the monitoring and consulting system is essential for increasing the quality of apprenticeship training. There is more need for capacity building for teachers, trainers and mentors. Collection and dissemination of information would give both municipalities and potential apprentices a better view of the opportunities of the apprenticeship system. This could promote the apprenticeship system as a positive choice instead of the 'last resort'. The role of TESK and TOBB is crucial. This also could be the starting signal for bringing an increased number of apprentices in the informal sector into the formal education and training system.

## References

- Akpınar, A., & Ercan, H. (2002). *Report on the vocational education and training system in Turkey*. Ankara: National Observatory Network.
- Demirer, İ., Aslan, S., Erdinç, S., & Kalkan, O. (2008). *Involvement of social partners in VET education particularly in tourism and construction*. Ankara: unpublished document.
- MoNE. (2009). *National education statistics: Formal education 2008–2009*. Ankara: MoNE.
- Parkes, D., Vos, A., & Nikolovska, M. (2009). *Involvement of social partners in education and training*. Turin: European Training Foundation.
- SVET. (2006). *Strengthening the role of the social partners and social dialogue in the vocational education and training system in Turkey (Policy paper)*. Ankara: SVET.
- SVET. (2007). *Vocational education and training in Turkey (Strategy paper)*. Ankara: SVET.
- TurkStat. (2009). *National education statistics, non-formal education, 2007/08*. Ankara: TurkStat.
- TurkStat. (2010). *Press release: Address based population registration system population census results, 2009*. TurkStat (Turkish Statistical Institute). <http://www.turkstat.gov.tr/PreHaberBultenleri.do?id=6178>. Accessed 15 May 2010.
- Ünlühisarcıklı, Ö. (2007). *Apprenticeship and enterprise-based learning systems in the MEDA region country report: Turkey*. Turin: European Training Foundation (Draft Document).
- Ünlühisarcıklı, Ö. (2008). Adult and further education: Systematic and historical aspects of non-formal education in Turkey. In A. M. Nohl, A. Akkoyunlu-Wigley, & S. Wigley (Eds.), *Education in Turkey: European studies in education* (pp. 131–150). Münster: Waxmann.
- Vos, A. (2008). *Third policy learning workshop Turkey: The apprenticeship system*. Turin: European Training Foundation (Workshop Report).
- Yazman, İ. (1999). *75 soruda İDDG el kitabı*. Ankara: International Labour Office.

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