European systems of vocational education and training (VET) - convergence or divergence?: The cases of England, France, the Netherlands and Germany

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Introduction

Political and economic developments of recent decades have sparked a continued debate concerning the convergence, harmonisation or equivalence of Europe’s diverse vocational education and training (VET) systems, given the common socio-economic challenges facing European states, increasing mobility of labour and global pressures for innovative product development and new forms of skills and knowledge (Boreham 2002). European Union (EU) policy has also sought to encourage the convergence of national VET systems, initially in relation to specific occupations and professions (Heyes and Rainbird 2009). More recently, the European Qualifications Framework (EQF) has emerged as one of the key outcomes of the Copenhagen Process, initiated following the Copenhagen Declaration of November 2002 on the promotion of enhanced cooperation in VET on specific instruments aimed at facilitating mobility in Europe to help create a common European labour market. The Copenhagen Process aims to promote harmonisation of VET systems by adopting a common framework for vocational qualifications. While VET itself remains a subsidiarity or no-competence issue with respect to EU legislation, it does fall under the mechanisms of the Open Method of Coordination (OMC), created as part of employment policy under the Lisbon Strategy (2002) and resting on ‘soft law’ mechanisms, such as guidelines and the sharing of best practice, with no official sanctions. The OMC is instead based on jointly identifying and defining objectives to be achieved, establishing measuring instruments and benchmarking (EC 2009).

The EQF is designed to enhance the comparability of qualifications, thus improving cross-national recognition and mobility. It describes qualifications on eight levels and according to three descriptors: knowledge, skills and competence. Crucially, it adopts an outcomes-based approach, as in the English National Vocational Qualifications (NVQ) system, with descriptors identifying the learning outcomes associated with qualifications, regardless of how these have been achieved. The problems with this approach are, however, the tendency to simplify the parameters of VET and to ignore both different understandings of the concepts underpinning VET systems and the institutional
embeddedness of VET and qualifications in national education systems, labour markets and industrial relations (Brockmann et al 2009a; Brockmann et al 2008a; Lucio et al 2007). The EQF has even been criticised for promoting a neo-liberal approach of ‘employability’ of individual workers, focused on meeting the skill needs of employers and promoting the mobility of workers by way of trans-national recognition of qualifications (Cort 2008).

Typologies abound that highlight the differential institutional structures of VET systems in Europe (e.g. Müller and Wolbers, 2003). Addressing the relationship between VET and the labour market, Rauner (2006) distinguishes between VET systems that focus on education of the person for an occupation (‘Berufliche Bildung’) on the one hand, and those aimed at the ‘employability’ of individuals, on the other. In the first type (exemplified by the ‘dual system of apprenticeship’), VET is integrated into a comprehensive education system and designed to achieve ability to act autonomously and competently within an occupational field. Qualifications are obtained through the successful completion of courses developed through negotiation with the social partners, integrating theoretical knowledge and workplace learning. In the second model (prevalent in Anglo-Saxon countries), a ‘market of qualifications’ enables individuals to enhance their employability following higher education (HE) through continuing vocational education or certification of sets of competencies acquired either through work experience or courses in a modularised system. The nature and type of skills is determined both by the market mechanism and by the decisions taken by individuals in order to enhance their careers or income. Rauner stresses that the employability model presumes a high level of general knowledge.

Looking at VET systems in the context of economic change, and building on Hall and Soskice’s (2001) distinction between liberal and co-ordinated market economies, Bosch and Charest (2008) point to the continued divergence of VET systems as a result of differences in industrial relations, welfare systems and product markets. Countries with co-ordinated market economies, characterised by a high level of social partner involvement in VET, have been able to reform their VET systems in line with new economic challenges and as a strategy for innovation. By contrast, initial VET in countries in liberal market economies has been marginalised and increased emphasis placed on general and higher education, albeit often of a vocational nature.

At the level of HE, there appears to be a degree of convergence in terms of provision, the structure of qualifications and the relationship between HE qualifications and the labour market. There has been a general expansion in HE in countries across Europe (and worldwide) and the Bologna Process has aimed at facilitating a common degree structure (Prokou 2008). Notably, there appears to be a common trend towards ‘employability’ in Rauner’s sense on the basis of high-level skills. There is evidence that, for jobs that require HE qualifications, employers value transferable competences, such as problem-solving and team-working, and the ability to perform, over formal qualifications. While the latter are important in terms of providing a certain level of general knowledge, for skill formation work experience in fast changing work environments remains critical (Brown et al 2008; Andrews and Higson 2008).
The paper draws on a Nuffield-funded study examining differences in understandings of key concepts underpinning VET systems in four European countries (England, Germany, France and the Netherlands) in relation to four occupations (bricklaying, lorry driving, nursing and software engineering). A key principle in the original draft of the EQF was the establishment of ‘Zones of Mutual Trust’, or ZMTs, as a precondition for the workability of the Framework. The development of ZMTs is based on a common understanding of the nature and currency of qualifications in the relevant VET and labour market contexts (Coles and Oates 2004). Part of our research has involved examining the prospects for ZMTs in relation to the different occupations.

The Study

Detailed empirical investigation of the different occupations in our study revealed a complex pattern of similarities and differences between and within countries. In particular, we identified three different approaches to VET or skills formation:

- occupational
- skills-based
- employability

In line with Bosch and Charest (2008), we found the greatest divergence in relation to traditional VET systems (as exemplified in this paper by bricklaying). In particular, we identified two distinct approaches: an occupational (knowledge-based) model, emphasising individual capacity within a broad occupational field through broad based occupational and civic education (dominant in the continental countries); and a skills model, focused predominantly on individual skill sets and the performance of particular tasks to meet specific employer needs with minimal underpinning knowledge (prevalent in England) (Brockmann 2007; Brockmann et al. 2008). These two models are, however, not static, but are being reformed to reflect changing practices in the labour market and in the organisation of work. Echoing Bosch and Charest (2008), the continental countries have consolidated their VET systems as a major force in the development of innovative skills required for economic change. Initiatives include a reduction in the number of occupations, the development of competence-based qualification systems, and the move from subject-based to self-directed learning. However, these countries have retained some of the key principles underpinning their VET systems, notably a broad knowledge and skills base to enable personal development within the occupation as well as in wider society. By contrast, VET in England has seen an increasing fragmentation of knowledge and skills, as epitomised by the NVQ system. The contrasting situations reflect different levels of social partner involvement, different labour markets, and different institutional structures. There appears to be little scope for developing ZMTs between England and other Northern European countries in relation to traditional VET qualifications.

A variant of the occupational model, exhibiting considerable convergence and facilitated by EU regulations, is evident in the professions or semi-proessions, as in the case of nursing in our study. Here arguably, a ZMT has been established through EU regulation
on the basis of an ‘input’-based system, that is one related to curricula, complemented by common structural changes to the sector and the occupation.

Our investigation suggested further convergence in relation to qualifications at HE level. We found, for instance, common aspects of the construction of qualifications and skills formation in software engineering, reflecting the employability model based on the individual acquisition of skills grounded on HE as described by Rauner (2006). Here, there appears to be a decline in the salience of initial formal qualifications and an increasing focus on high-level transferable skills and competence and on workplace learning. This process of what appears to be an emergent ZMT is underpinned by common global developments in the sector.

The analysis illustrates that it is important to look beyond formal qualifications to particular sectors, occupations, institutional structures and the ways in which labour markets operate in practice. The paper will briefly describe the two models of the occupational and the skills approach along four analytical dimensions: the nature of governance; the value of qualifications in the labour market; the conception of ‘competence’; and the mode of education. This will be followed by a detailed discussion of differences and similarities in relation to our four occupations.

The occupational and the skills model of VET

Governance

We can distinguish between two broad patterns of governance: the social partnership model dominant in the continental countries, and the voluntarist approach in England. In the continental countries, the state sets the framework for qualifications and VET courses in negotiation and cooperation with the social partners, who are involved at all levels in the VET institutional structure, including in terms of curriculum development, monitoring changes in VET requirements, controlling implementation of VET provision, assessment, advising government, research etc. (Clarke and Herrmann 2004). This ensures the representation of the interests of all stakeholders, including employers, trade unions, and educationalists, resulting in varying degrees of consensus. The provision of programmes that combine broad-based occupational and general education incorporates the right of a young person to a lifelong career, enabling continuing VET and occupational and social mobility.

England in contrast has very weak social partnership arrangements and fragmented institutional structures, characterised by an increasingly strong bias towards employers’ perceived interests, even though organised employer associations are relatively weak. Since the 1980s there has been an increasing weakening of trade union involvement in VET; they have for instance no longer a formal contractual role in apprenticeships (Brockmann et al. 2009b). The current system was designed by the government to be employer-led, neglecting the interests of other stakeholders, notably those of employees and trainees but also of educationalists. Instrumental in the new system are the Sector Skills Councils (SSCs), set up as private companies under government license as the ‘voice of employers’ (Clarke and Winch 2006). Their remit is to develop qualifications
within ‘work-based learning’ (in particular NVQs and apprenticeship frameworks) in consultation with employers, trade associations or employers’ representatives; trade union involvement in the development of qualifications has become minimal (LSC 2007). The SSC system is problematic, as it does not foster or build upon collective employer or employee interests but promotes the needs of individual, usually larger, employers, while those of most other employers are ignored (Keep 2007; Farlie 2004). The process of accepting particular areas of activity for NVQ development is largely based on employer and trade association lobbying, to produce what may be seen as trade qualifications. This contributes to the other, more serious, deficiency – that the system generates the creation of narrow qualifications, focusing on and even reinforcing existing practices within particular companies. It thereby hinders innovation, while restricting the occupational mobility of employees due to the paucity of transferable skills (Ertl 2000).

**Labour market**

The two approaches, occupational and skills-based, also differ in terms of the value or currency of qualifications on the labour market. In the continental countries in the study, as we have seen, the tendency is for qualifications to be based upon broadly conceived occupations and developed in negotiation with the social partners. The system serves as a quality assurance that a person with a certain qualification has completed a regulated and recognised VET programme and is therefore competent within that occupational field. This provides the basis for occupational labour markets (Eyraud et al. 1990). Different qualification levels are linked to wage grades established by collective agreement. Thus, qualifications based on broadly conceived occupations are rewarded on the labour market. In the light of changing labour markets, organisation of work, and technologies, there has been a tendency to broaden qualifications further to encompass a range of jobs, as with the Dutch nurse who is qualified to work in both care homes and hospitals. The development of the individual within an occupational field (enabling occupational mobility and lifelong careers) is a fundamental principle which is accepted by all stakeholders – albeit to varying degrees (Brockmann 2007).

By contrast, in England, labour tends to be employed for a particular job rather than qualified for a broad occupation. As a result, pay is commonly linked to performance and the job-in-hand rather than the qualification. In the same vein, work experience commonly counts for more than qualifications. This is also reflected in the wage structure and collective agreements which rarely relate directly to qualifications. The British concern with the workplace and with output of work has historical echoes in Adam Smith’s discussion of the fragmentation of labour processes into simple tasks requiring limited skill sets (Smith 1976). The labour market and VET system revolve around the relationship between the individual worker and his/her work, and the skills necessary for a particular job. This is reflected particularly in the NVQ system, which forms a central component of government-sponsored Apprenticeships, where qualifications are based on relatively narrow skills sets deemed necessary for certain restricted areas of activity identified by employers. Hence, the scope of occupational activity is narrow and focused on tasks, rather than on the person or values such as personal development.
**Competence**

The move towards competence-based approaches has been a common phenomenon in many Western economies (Winterton et al. 2005). The term ‘competence’ relates to performance in the workplace, and its introduction into VET generally reflects a concern with developing knowledge and skills appropriate to the changing organisation of work (Boreham 2002). The VET systems in Germany, France and the Netherlands all draw on a multi-dimensional model of competence (Brockmann 2007). This involves the development of different types of knowledge and particular skills, as well as social and personal competencies, such as the ability to make independent decisions. It is epitomised by the German concept of *Handlungskompetenz*, or competence of action-taking, with its occupational, personal and social dimensions, and is reflected in the French notions of *savoir*, *savoir-faire* and *savoir-être*. Competencies are integrative and relate to a comprehensive notion of occupation. The ability to draw on a multitude of resources to deal with complex work situations and, in particular, to integrate knowledge into practice, is crucial for the competence development of the individual (Rauner 2004). In line with the social partnership model, competences are agreed by a variety of stakeholders as a prerequisite to securing lifelong careers as well as innovative potential in a context of technological change.

In contrast, in England competence is defined only in behavioural terms (Delamare le Deist and Winterton 2005). The functional competence model is epitomised in the NVQ system, whereby individual functions are combined into elements of competence representing tasks deemed necessary for certain job roles (Brockmann et al 2008b). It is a model concerned with clearly defined outcomes (embodied in the performance of specific tasks), themselves reflecting employers’ immediate skill needs related to existing functions in the workplace. Thus, rather than being based upon broad capacity within a comprehensive occupation, NVQs are concerned with accrediting the performance of skills necessary to execute prescribed tasks. Theoretical knowledge is deemed necessary only inasmuch as it underpins performance, a factor which has arguably led to the fragmentation of knowledge, prevented employees from transcending their particular work context and in this way impeded both occupational mobility and innovative scope (Ertl 2000). While apprenticeship frameworks consist of NVQs, a college-based element and key skills, these are explicitly not integrated but taught independently from one another, while containing no comparable element of general or civic education (Brockmann et al 2009b). The system promotes the performance of set tasks to a defined standard, with employees following instructions in a non-reflective way.

**Education**

The English system continues to be characterised by a relatively sharp divide between academic (general) education and vocational education (Pring 2007). Based on the traditional craft-based apprenticeship system, VET in England has been characterised by on-the-job learning of specific skills usually in a single employer context, with minimal underpinning knowledge (Clarke and Winch 2006). While able students are encouraged to do A’-levels, VET is commonly seen as the route for ‘low achievers’. Being primarily
concerned with preparation for a particular job, it contains only the weakest notion of
general education. So-called ‘functional skills’, consisting of literacy, numeracy and IT,
were introduced in response to concerns about the poor functional abilities of school
leavers. Indeed, the term ‘training’ - reflecting a concern with the outputs of jobs and
tasks rather than occupational capacity - is more appropriate than ‘education’. VET in
England is separate from the general education system and permeability with other
educational routes is limited.

Whilst there are a variety of qualifications, the outcomes-based NVQ system perhaps
characterises the English VET model. NVQs are not linked to a curriculum, but constitute
the accreditation of existing skills. Oriented towards specific employer needs, the system
has arguably promoted the narrowing down and fragmentation of skills and knowledge
(Green 1998). While the introduction of the Modern Apprenticeship scheme in 1994 was
intended to produce an intermediate workforce, this has, on the whole, not been achieved
(Fuller and Unwin 2003). Apprenticeship schemes consist of NVQs and a college-based
element commonly leading to a Technical Certificate. However, as funding is linked to
outcomes, apprenticeship programmes often just reflect the narrow requirements of
NVQs. In many sectors attainment is low and drop-out rates high. In the context of a
weak regulatory framework, the persistence of low-skilled labour markets and declining
employer commitment to quality VET, provision is, at best, variable.

Traditionally, in the continental VET systems’ emphasis has been placed on citizenship
and preparing students for life as well as for an occupation (the ‘education model’).
Whether in a dual or apprenticeship system, there is a concern to continue the broader
educational element into VET, both at compulsory and post-compulsory phases. This is
partly because VET is considered to be a continuation of school education, partly because
some employers prefer a broad preparation and partly because trade unions regard VET
as a preparation for working life and not just training for particular employment.
Countries differ in the extent to which candidates are expected to be ready for work at the
end of their period of vocational education - and sometimes the issue is left ambiguous
(e.g. in France). VET reflects a concern with the theoretical underpinning of the
occupation for which the candidates are being prepared (Savoir, Wissen) and is based on
a broad curriculum which includes both a civic and a general educational element.

**Bricklaying: The occupational- versus the skills based model**

For bricklaying, our original distinction between an occupational and a skills-based
model is confirmed, and there appears to be little possibility to develop ZMTs. The one
salient difference between the two models is in the breadth of the occupational field of
bricklaying. On the continent, the scope of bricklaying is comprehensive and broadly
defined; VET is designed to achieve ‘occupational capacity’ within this field, drawing on
a multitude of occupational and personal competences. The system of social partnership
operating in Germany, France and the Netherlands is crucial in underpinning this broad
understanding of the occupation. There is consensus between employers, unions and
educationalists in terms of the comprehensive nature of VET to prepare trainees for
different contexts in a highly diversified industry and to ensure lifelong occupational
mobility. The qualification is an important condition for labour market entry and serves as an assurance that the holder has acquired through a recognised VET programme a certain level of skills, knowledge and competence within a specified and broadly defined occupational field.

The resulting scope of activities of bricklayers in these countries is thus far broader than in England and the level of autonomy relatively higher. In particular, while bricklaying in England is largely restricted to the task of laying bricks, the qualification in the continental countries enables the holder to carry out complex tasks in relation to the wider labour and work processes (Clarke and Wall 1996 and 1998). In addition to setting out and reading drawings, responsibilities include a broad range of activities, including: planning, co-ordinating, organising and documenting the work; undertaking building work in a variety of contexts (newly built, restoration, housing, industrial); working with a variety of materials, including concrete and stone as well as bricks; and evaluating the quality of work carried out. This represents a deliberate attempt to move away from the bricklaying as a trade, which it still remains in Britain, to the construction of an occupation (Kalck 2008).

Bricklaying in England conforms to the ‘skills-based model’ of narrow specialisation, rather than occupational capacity. Bricklaying qualifications are regulated largely by the relevant Sector Skills Council, in this case, ConstructionSkills, reflect primarily the needs of particular trade associations and some VET providers, at the expense of collective representation of either employers or unions, and are based on the accreditation of existing skills rather than being linked to a regulated programme of VET. Even with the apprenticeship model, which is linked to a VET programme, the scope is similarly narrow as NVQs continue to be the principal structuring element. Many bricklayers are either self-employed or employed by labour-only subcontractors, carrying out specialist activities according to contract but also even – apart perhaps from in housebuilding – using a range of materials, including concrete blockwork and stone, for which they may have little or no formal training. The labour market rewards specific skills sets, as reflected in the collective agreement which refers to skills rather than qualifications. In practice, except in the public sector, unionisation rates for bricklayers are very low and there is little conformity to collective agreements, bricklayers being generally paid according to the price agreed for the job-in-hand. The level of autonomy and responsibility enjoyed by bricklayers in France, Germany and the Netherlands is largely non-existent in England, where much greater reliance is placed on close supervision (Clarke and Wall 1996).

Crucially, the occupational and skills models differ in their conception of the notion of competence. The Dutch, French and English VET qualification frameworks are all ‘competence-based’, identifying detailed competences derived from an analysis of tasks in the workplace and awarding qualifications on the basis of an assessment of these through task performance. This suggests that the English conception of competence is superficially similar to that in the Netherlands and France, but further examination shows that this is not the case. In the continental countries, the concept of competence is multi-dimensional and refers to the knowledge and skills, as well as the social and civic
attributes, deemed necessary to carry out tasks in the workplace. Competences are integrative and relate to a comprehensive notion of occupation, which encompasses the personal development of the individual, building on the multiple resources that an individual draws on when confronted with any particular task. Crucially, in France and the Netherlands, competences form the basis for curriculum development. Thus, the development of competence is achieved through what is essentially an input-based system and is understood as the culmination of an educative process. While, in England, competences derived from task analysis comprise knowledge and skills deemed necessary to carry out the task, VET programmes in France and the Netherlands go much further by providing general and civic education, ensuring lifelong development within the occupation as well as in society. For example, in the Netherlands, the qualification consists of ‘occupational’ competences (with occupational, method, social and civic dimensions) and ‘civic’ competences (comprised of lifelong learning, career, and citizenship competences). There are 13 competences, including adjusting and calibrating, handling tools and machines, problem solving, communication, and continuous development of individual competence. Bricklayers are expected to solve so-called ‘choices and dilemmas’, which are problems confronted in work situations, for example in relation to conflicts between the competing demands of quality and productivity and design and actual construction. Thus, while competences relate to specific tasks, it is still posited that the accomplishment of these tasks requires the worker to draw on a multitude of resources and to exercise professional judgment in the course of their work. In all continental countries, VET includes substantial elements of theoretical knowledge (maths and physics) and of general education (including a foreign language in France and the Netherlands). These not only promote the development of the individual but further the development of powers of professional judgement in an often explicit attempt to construct an occupational identity (Kalck 2008).

By contrast, in England, NVQs in bricklaying involve a narrow set of activities and are not necessarily linked to a curriculum. In this sense it is an ‘output’ based system, where what is crucially important is the accomplishment of a range of narrowly defined tasks irrespective of how the ability to carry out those tasks was acquired. Indeed, bricklaying is dominated by high levels of informal on-the-job learning, with the accreditation of existing skills through on-site assessment. The apprenticeship (typically taking 2 years) consists of an NVQ, the Construction Award (the theoretical element), and so-called ‘functional skills’. These elements are narrow in scope and are not integrated with one another. The NVQ level 2 in bricklaying is restricted to the task of bricklaying: laying bricks, mixing cement, working in a straight line and around corners. Competences have no civic or social dimension. Construction VET courses are characterised by a strong demarcation between different construction trades with no common basis, eschewing the breadth of occupational capacity characteristic of France and the Netherlands. The functional skills (literacy, numeracy, ICT) are viewed by many as remedial rather than as constituting general (liberal) education. Underpinning knowledge is fragmented, with theory being drawn on only inasmuch as is needed for practice.

The German qualification is in stark contrast as it represents a conventional input-based system. The aim of VET is to develop ‘competence of action-taking’
Handlungskompetenz), which is conceived in terms of its different dimensions of occupational, social and personal competence. Accordingly, a comprehensive curriculum is designed to achieve this competence. Individual competencies, or learning outcomes, are specified in the training profile (Berufsbild) of the training regulation and do not relate to individual skills and knowledge. Rather, they serve as standards or indicators of whether the aims of the VET programme have been achieved, that is as learning outcomes in the sense that they specify the goals of an educational process. The German dual system of apprenticeship is perhaps the most broadly conceived qualification, taking three years to complete. During the first year, VET covers all main construction domains (construction, civil engineering, and finishing (Hochbau, Tiefbau, Ausbau)). At the end of the first year, apprentices specialise in one of these domains and only in the third year in their chosen occupation of bricklaying. As well as attending college and work experience on site, apprentices also attend block release training (up to 37 weeks in total) in training centres financed by a levy.

Because of the job-specific and narrow nature of qualifications in England, there are few opportunities for career progression and bricklayers generally only qualify to NVQ Level 2. By contrast, in the Netherlands, Germany and France the qualification is part of an integrated education system with clear progression routes to level 3 and beyond, through the vocational route (CVET).

Thus, the two models differ in crucial respects. However, notwithstanding the differences between the continental countries, there are also important similarities, notably regarding scope and mode of learning, which could provide the basis for mutual trust. By contrast, the differences between the occupational model in the continental countries and the skills-based model are enormous, reflecting different VET traditions and labour market structures.

Employability: software engineering

ICT is a new sector without a long-standing tradition of VET. It is characterised by accelerated change in technologies and product development at a global level, accompanied by innovative work organisations, and dominated by a global industry. Despite important differences between countries, software engineering also displays aspects of what, following Rauner (2006) may be termed the ‘employability’ approach to skills formation, based on individual acquisition of skills on a training market (grounded on a high level of general education) and according to employer demands.

Prompted by extreme skill shortages in the sector, a lot of work has been undertaken at EU level to develop a European meta-framework for IT in order to facilitate the identification of skills needs, workforce development and mobility of labour (e.g. CEN 2006). Interestingly, this initiative has so far faltered on the differences in national VET systems and no agreement has been reached. However, in the absence of a formal framework, the sector is marked by high levels of national and cross-national workforce mobility, centred on ‘competence’, skill performance and work experience, and the proliferation of multi-national companies.
In general, the role and scope of activities of software engineers has broadened over the past decade. There have been a number of changes, notably the integration of IT into businesses, leading to a diversification of the sector, and changes in work organisation characterised by flattened hierarchies. The role has changed from specialist straightforward programming to software design, with a pivotal involvement in customer negotiation and ‘end-to-end’ management. In a fast changing industry, social and personal competences, including communications, team-working, problem-solving, but also the ability for self-directed learning and a personal interest in technology, are highly valued, and may take priority over formal qualifications based on comprehensive and nationally recognised VET programmes. There is movement away from technical specialism to generic skills and an understanding of relevant business needs. This development is underpinned by a change in the nature of IT knowledge, as much of this has been processed (in the form of codes), and the emphasis is now on the application of knowledge and is oriented towards finding solutions for customers.

There are important differences in the VET programmes between the four countries. School- and university-based programmes in the continental countries aim at broadly-conceived occupational profiles. These are centred on a knowledge base of underlying principles and comprise general education as well as social and personal competences, so reflecting the continental model of education. By contrast, in England, ‘software engineering’ is not a VET qualification but rather refers to a designated job role. Thus, qualifications in IT (e.g. ‘IT Professional’) are commonly generic with specialisation at company level. While the HE degree is an important entry qualification, it serves predominantly as an indicator for academic ability. Also, within HE there has been a shift from subject-based knowledge to skills acquired in project work. This is then followed by graduate training within a firm, where the emphasis is on developing particular skills, largely meeting employer skills needs. Thus, there is a certain convergence of initial VET and CVET, with all routes relying largely on workplace training. Because of the changing role of software engineers and their increased role in customer negotiation, multi-dimensional competences are deemed highly important. However, in England, such competences are developed in the workplace rather than in school-based VET.

Notwithstanding the differences in VET, there appears to be a common trend in all countries away from reliance on knowledge based initial VET to skills-based CVET, and towards greater workplace orientation, with more emphasis on workplace VET, both through apprenticeships and CVET. Moreover, initial and continuing work-based VET relies increasingly on self-directed project-based or on-the-job learning, with knowledge acquired only to the extent that it is perceived necessary to perform tasks. In the context of a fast changing industry, in initial as in continuing VET, the ability to perform tasks is valued over formal qualifications.

In the countries where university-level education has been the dominant route for software engineers (France, England and Germany), there have been complaints that initial VET does not meet employers’ skills needs (Kirpal 2004). This concerns both technical skills (it has been suggested that technical knowledge is outdated by the time
people graduate), and social competences, such as communication and team-working skills. In particular, employers have complained about the lack of work experience. One response in England, has been to develop a new progression route, from Higher Apprenticeships to Foundation Degrees, for instance by British Telecom. Indeed, the preference for work-based VET is reflected in the growing significance of apprenticeships, both at secondary and tertiary level (in France, Germany and England). In both England and Germany, apprenticeship frameworks are flexible to accommodate employer-specific skill needs.

Employers everywhere have placed increasing emphasis on CVET of graduates in the workplace. In the continental countries, initial VET in a relevant field (IT or cognately related science) is still an important labour market entry condition. However, recruitment in all countries is followed by a period of workplace training, one which is generally longer and more substantial in England. In terms of CVET, in all countries this is generally directed at meeting short-term skill needs, and commonly involves product-related knowledge, acquired in short courses (rather than more comprehensive education, such as Master-level degrees), with vendor qualifications holding strong labour market currency. Beyond initial VET, the focus is on skill portfolios and the constant up-dating of immediate individual skills rather than long-term development based on a broad underpinning of theoretical knowledge.

The outcomes-based nature of CVET in ICT generally and software engineering in particular and the increasing focus on workplace learning, vendor qualifications and the acquisition of immediate skills, together with the high value placed on social and personal competencies, form the platform upon which workforce mobility (national and cross-national) between often large multi-national enterprises takes place.

**The semi-professional occupation: nursing**

The greatest degree of convergence is found in the occupation of nursing. Indeed, a strong basis for mutual trust is provided through EU regulation of what is essentially an input-based system. Thus, nursing is subject to common EU governance as well as closely similar systems at national level. In addition, there have been common developments in the role of nursing. Most crucially, as the most knowledge-based of our selected occupations, there is convergence in the nature and type of education.

As a regulated profession, the qualification, obtained in a highly formalised VET system, is a pre-condition for registration. Indeed, VET is subject to strict regulation both through national bodies and EU legislation. At national level, all countries conform, to some extent, to the social partnership model, with inputs from employers, unions and educationalists. The European Directive 2005/36/EC for Health and Social Care Professions regulates the number of hours to be devoted to theory and practice, as well as the broad content of the curriculum in terms of scientific knowledge, clinical experience and ethical conduct. The intention of the Directive is to enhance EU-wide mobility of qualified professionals through the mutual recognition of qualifications ‘with a minimum of red tape but with due safeguards for public health and safety and consumer protection’
By effectively regulating the broad input of VET programmes, the Directive creates an important basis for mutual trust.

In addition, there have been a number of common developments over the last two decades, resulting in changes in the status and role of nurses, which appear to have contributed to continuing convergence of nursing qualifications and occupational profiles across the EU. The changes have emanated from a combination of developments, including the restructuring of health services to cope with increased pressures, skill shortages in nursing, and attempts by practitioners and educationalists to establish nursing as a profession in its own right, independent of medical doctors (Kirpal 2003, 2004).

In all countries, VET in nursing is school-based with clinical placements. In England, this has involved a break with the apprenticeship model and the introduction of supernumerary status through NHS Project 2000. To improve the status of nurses (and recruitment), degree level education pathways have been established in all countries, although the increase in degree-level nurses is much more significant in England and France). This has involved a controversial shift towards increasing the theoretical scientific input at the expense of practical (caring) tasks. In England and France, these developments have coincided with the creation of nurse specialists and consultants and there is a high overlap with roles from related professions, notably medical doctors. By contrast, in Germany and the Netherlands, nurses have not been able to encroach on areas associated with the medical profession, and, in Germany, HE pathways have been established in management and teaching.

While in all countries, the role of the nurse in the workplace has changed from a traditional caring role towards the performance of more ‘technical’ tasks, in Germany these primarily concern a growing administrative workload and responsibility for documentation and budgeting in a tightly monitored health system. In England and France, new responsibilities also increasingly include medical tasks (such as inserting a needle into a vein). In all countries, the changes have led to role conflicts and debates concerning the neglect of ‘the art of caring’ (i.e. nurses’ responsibility for holistic patient care). The new role has been reinforced in England and France by the delegation of routine caring tasks to care assistants, a move planned also in Germany.

The specialist positions of nurses in France and England appear to have given nurses their own area of expertise, their own caseload and high levels of autonomy (Yam 2004). However, it can be argued that the role of nurses in all countries is governed largely by the requirements of employers in terms of skill needs. In the context of restructuring and efficiency gains sought through, for example, the merging of wards, there are greater demands for flexibility, with nurses required to work across tasks and in different departments, according to staffing demands (Kirpal 2003, 2004). An example of this is the French Service de Compensation et de Suppléance, constituting a pool of nurses who are allocated to different hospital departments according to demand. There is evidence in all four countries that staff development is strongly dependent on employer interests. For example, the Knowledge and Skills Framework in England facilitates progression in
terms of the skills and knowledge as defined by the employer (Department of Health, 2004).

The developments have sparked debates about the nature of the ‘professionalism’ pursued and whether nursing will in fact become too elitist, at odds with contemporary initiatives based on equal partnership between professionals and lay people (Gerrish et al. 2003). However, to the extent that the nursing body of knowledge as well as the nursing role in the workplace is controlled by health care managers, rather than by nurses themselves, the occupation can be more accurately described as a semi-profession.

There are, therefore, considerable commonalities in the qualification and role of nursing (albeit that they enjoy a higher status in England than in France, having made inroads into the medical profession). The qualification is education- rather than labour market-based conforms to the ‘education’ model, being part of a comprehensive education system, and comprising substantial medical and social science education as well as ethics. All countries apply a multi-dimensional model of competence, centring on the integration of a scientific body of knowledge into practice, and relying strongly on social and personal competences. The initial qualification in nursing is also essential to the gaining of a licence of practice and regulation concerning input at EU level establishes to a considerable extent the grounds for mutual trust. However, national variations, particularly concerning the role of nurses, still persist; in practice, while an English nurse would be able to work in Germany, s/he may feel her/his role curtailed compared to that with an English employer.

Conclusion

From our survey of three occupations in four countries the following conclusions can be drawn concerning convergence and divergence and hence the prospects for future use of EQF based on the development of ZMTs. Trust based on EU regulation, as in the case of nursing, depends on the imperative of patient safety, which in turn ensures that the initial nursing qualification in each country serves as a guarantee of safe practice in a wide range of caring and medical activities. Thus, one mode of trust generation proceeds from regulation governing initial qualifications and a licence to practice. EU regulation forms the basis of the qualification and licence in a range of other safety-critical occupations, most notably lorry driving. In this case, however, the regulations do not cover the potential range of activities that a driver may be expected to carry out but relate to the core activity of controlling the vehicle. The generation of trust through regulation is reinforced, in the case of nursing, through similar VET systems based on higher education, although here there are some tensions in labour mobility due to intra-state variations, pointing to a second factor in the generation of mutual trust, namely the existence of common or similar IVET systems in different countries.

A further mode of generation of mutual trust that we have identified occurs through industrial and occupational convergence, as in the case of software engineering. In this case, multinational enterprises which have developed internal labour markets work within a broader sector which uses many standard industrial applications, competence in whose
use is often underpinned by highly regarded vendor qualifications. An internal labour market structure is complemented by elements of an occupational labour market across European countries (Eyraud 1990). A higher education qualification is not necessarily regarded as an occupational qualification, let alone a licence to practice, but it does impose a degree of common educational experience across the sector. CVET, although highly specific and often project-based, depends on the application of transferable skills on the basis of previously developed underlying competences. This form of semi-professional convergence forms another, albeit more nebulous, basis for the development of mutual trust.

Whilst such an occupational labour market in the case of software engineering may have arisen initially on the basis of highly developed internal labour markets, in the case of bricklaying any occupational labour market which can be identified has been cemented through high levels of labour mobility on the external labour market and common VET systems. Cognate forms of initial VET for bricklaying in France, Germany and the Netherlands may well allow a ZMT to develop. England, however, with its low level, narrowly-based and non-educational bricklayer qualification appears as an outlier to the continental system and thus unlikely to find that its qualifications have much labour market, let alone educational, currency in these other countries, unless English bricklayers are hired for positions below the level of a qualified bricklayer. We can envisage, therefore, a situation in which the English trades continue to diverge from their occupational counterparts in other Northern European countries.

Where these conditions for the development of mutual trust are absent, either individually or severally, it is, therefore, much more difficult to see how the EQF could work.

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