

# What Is Competence?

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**ABSTRACT** *This paper explores the definitions and usage of competence, especially in the context of training and development initiatives in the USA, UK, France and Germany, seeking to clarify the concept by incorporating knowledge, skills and competences within a holistic competence typology. One-dimensional frameworks of competence are inadequate and are giving way to multi-dimensional frameworks. Functional and cognitive competences are increasingly being added to behavioural competencies in the USA, while in the UK cognitive and behavioural competences are being added to the occupational functional competence model. France, Germany, and Austria entering the arena more recently, adopted from the outset more holistic, but different, approaches. After comparing these approaches, we argue that a holistic framework is useful in identifying the combination of competences that are necessary for particular occupations and to promote labour mobility.*

**KEY WORDS:** Knowledge, skills, competence, competency

The concept of competence or competency ('competence' generally refers to functional areas and 'competency' to behavioural areas but usage is inconsistent, as shown below) dominated the management strategy literature of the 1990s, which emphasized 'core competence' as a key organizational resource that could be exploited to gain competitive advantage (e.g. Campbell and Sommers Luchs, 1997; Mitrani *et al.*, 1992; Nadler and Tushman, 1999). Hamel and Prahalad (1994) defined core competence as 'the collective learning in the organisation, especially how to co-ordinate diverse production skills and integrate multiple streams of technologies' (Prahalad and Hamel, 1990: 82). From the perspective of a resource-based theory of the firm, sustained competitive advantage is seen as deriving from a firm's internal resources if these can add value, are unique or rare, are difficult for competitors to imitate and are non-substitutable (Cappelli and Crocker-Hefter, 1996; Elleström, 1992; Foss and Knudsen, 1996). The virtue of the core competence approach is that it 'recognises the complex interaction of people, skills and technologies that drives firm performance and addresses the importance of learning and path dependency in its evolution' (Scarborough, 1998: 229).

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It is paradoxical that, while management strategists were emphasizing competences that are unique and firm-specific, the HRD literature was more concerned with developing highly transferable generic competences that are required for most jobs or particular occupations or job roles (Lévy-Leboyer, 1996; Stasz, 1997). There is an inherent tension between the strategy and HRD approaches. If concentrating on core competences that are 'distinctive and specific to each individual organisation' is what gives competitive advantage (Bergenhengouwen *et al.*, 1996), the scope for generic competence frameworks is limited; as Thompson *et al.* (1996) note, rigid adherence to a generic list for managers of a small firm may undermine the very things that have led to its current success.

The competence-based approach in HRD and vocational education and training (VET) was driven by several factors, some global in nature, others particularly European. First, and universally, the pace of technological innovation in products and processes, along with demographic change, has increased the importance of adaptive training and work-based learning in the HRD agenda. This need has led to the second global factor, the replacement of supply-driven traditional education systems with demand-driven models that favour output-related (typically described as 'competence-based') systems of VET. Third, and especially in Europe, lifelong learning policy emphasizing informal and non-formal learning has led to initiatives like the Personal Skills Card and the European Skills Accreditation System, to identify and validate competences so acquired, and in many EU member states the education and training systems have begun to validate tacit skills (Bjørnåvold, 1999, 2000). This policy emphasis is related to a fourth factor, supporting 'Social Europe', since recognizing learning outcomes, *irrespective of the routes of acquisition involved*, rather than inputs in terms of time spent in institutions of learning, is key to widening access to learning and providing 'ladders' for those who have had fewer opportunities for formal education and training but have nonetheless developed competence experientially. The fifth factor, also related to the objectives of European lifelong learning policy, is the potential of a competence-based approach for integrating traditional education, vocational training and experiential development. The sixth factor, elaborated in the European Employment Strategy, is the need to improve the skills and qualifications of the labour force and to promote labour mobility through constructing common reference levels of occupational competence.

In relation to this generic competence approach, the development of an appropriate typology of competence is important for integrating education and training, aligning both with the needs of the labour market and promoting mobility for individuals (vertical as in career progression, lateral as in movement between sectors and spatial as in geographically), especially for workers faced with job insecurity (van der Klink and Boon, 2002). If competence is important, it follows that its meaning is also important, since without a common understanding there is little chance of integration, alignment or mobility in practice. However, despite the central role of competence, there is considerable confusion surrounding the term, which reflects conflation of distinct concepts and inconsistent usage as much as differences in systems, structures and cultures of HRD and VET. This paper explores the various definitions and usage of competence, contrasting three dominant approaches in the USA, UK, France Germany and Austria, which developed more or less independently, and, comparing these, seeks to clarify the concept by

incorporating knowledge, skills, competences and competencies within a holistic competence typology.

### **Competence as a ‘Fuzzy Concept’**

There is such confusion and debate concerning the concept of ‘competence’ that it is impossible to identify or impute a coherent theory or to arrive at a definition capable of accommodating and reconciling all the different ways that the term is used. As Norris argued, ‘as tacit understandings of the word [competence] have been overtaken by the need to define precisely and [to] operationalize concepts, the practical has become shrouded in theoretical confusion and the apparently simple has become profoundly complicated’ (1991: 332). Describing competence as a ‘fuzzy concept’, Boon and van der Klink nonetheless acknowledge it as a ‘useful term, bridging the gap between education and job requirements’ (2002: 6).

Snyder and Ebeling (1992) refer to competence in a functional sense, but use ‘competencies’ in the plural. Some authors consistently use ‘competency’ when referring to occupational competence (Boam and Sparrow, 1992; Mitrani *et al.*, 1992; Smith, 1993) or treat the two as synonymous (Brown, 1993, 1994). Hartle argues that competency as ‘a characteristic of an individual that has been shown to drive superior job performance’ (1995: 107) includes both visible ‘competencies’ of ‘knowledge and skills’ and ‘underlying elements of competencies’, like ‘traits and motives’. Elkin (1990) associates competences with micro-level job performance and competencies with higher management attributes and, in defining ‘managerial competencies for the future’, Cockerill (1989) combines output competences, like presentation skills, with inputs like self-confidence. The difficulty of using competence as an overarching term as well as a specific one is demonstrated by the apparently tautological definition provided by Dooley *et al.*: ‘Competency-based behavioural anchors are defined as performance capabilities needed to demonstrate knowledge, skill and ability (competency) acquisition’ (2004: 317). According to this construction, competency is a sub-set of itself.

The few attempts to establish coherent terminology (Boak, 1991; Tate, 1995; Winterton and Winterton, 1999; Woodruffe, 1991) have had little impact to date. Boak (1991) argues that ‘competency’ in the American sense complements ‘competence’ as used in the UK occupational standards. Burgoyne (1988) similarly distinguishes ‘being competent’ (meeting the job demands) from ‘having competencies’ (possessing the necessary attributes to perform competently). Woodruffe (1991) offers the clearest statement, contrasting areas of competence, defined as aspects of the job which an individual can perform, with competency, referring to a person’s behaviour underpinning competent performance. Woodruffe’s definition is endorsed by Tate who warns against confusing ‘input competencies with output competences’ (1995: 86).

Mangham (1986) noted that competence may relate to personal models, outcome models or education and training models, as well as to the standards approach in which benchmarking criteria are used. Mansfield (2004: 304) similarly contrasts three different usages of competence: outcomes (vocational standards describing what people need to be able to do in employment); tasks that people do (describing what currently happens); and personal traits or characteristics (describing what people are

like). Weinert (2001) lists nine different ways in which competence has been defined or interpreted: general cognitive ability; specialized cognitive skills; competence-performance model; modified competence-performance model; objective and subjective self-concepts; motivated action tendencies; action competence; key competencies; meta-competencies.

Different cultural contexts influence the understanding of competence (Cseh, 2003) and this is especially important in relation to the extent to which competence is defined by cultural literacy involving group identities such as race, gender, age and class (ascription), as opposed to demonstrable behaviour (achievement). As Jeris and Johnson note, the distinction is confounded by the role of ascription in providing access to education and career opportunities that enable achievement: 'As much as the behavioral and skill-based performance assessments portend to be "neutral and objective," the ascriptive elements remain present and troubling for today's increasingly diverse workplaces' (2004: 1104). There have been few attempts (notably Boon & van der Klink, 2002 in the USA; Eraut, 1994 in the UK) to situate competence in terms of socio-cultural practices, which as Jeris and Johnson note:

is disturbing in light of the strong bonds between identifying *competencies* and tying them to practice standards. These standards, once developed, find their way into practice through certification of people and processes, through accrediting agencies (public and private) for all sorts of educational programs, and through qualification examinations and licensure requirements... The commodification of *competence* into certifiable *competencies* privileges the KSA (knowledge, skills and attitudes) worldview, and turns what Boon and van der Klink (2002) found to be a somewhat flexible concept into a rigid sorting mechanism that may have grave consequences for marginalized groups.

(Jeris & Johnson 2004: 1108)

The same argument can be made in relation to the neglect of organizational culture and workplace context, since generic competences may not be transferable across different knowledge domains (Burgoyne, 1989; Canning, 1990; Kilcourse, 1994). The Job Competences Survey developed by Dulewicz and Herbert (1992) demonstrated that the skill needs of managers are sufficiently generic to permit generalizations across the occupation. Despite differences in the managerial function in different contexts, Dulewicz (1989) found that firm-specific competencies represented only 30 per cent of the total competencies basket, while the remaining 70 per cent were common to a wide range of organizations. However, Antonacopoulou and FitzGerald warn that the 'fact that many organisations use the same terminology to describe a set of managerial characteristics is not a strong argument for claiming that it is possible to identify a set of universal management competencies' (1996: 31). Such critics claim that rationalist approaches create abstract, narrow and over-simplified descriptions of competence that fail adequately to reflect the complexity of competence in work performance (Attewell, 1990; Norris, 1991; Sandberg, 1994).

Since competences are centred on the individual, they are viewed as independent of the social and task-specific context in which performance occurs, yet 'skill level is a characteristic not only of a person but also of a context. People do not have

competences independent of context' (Fischer *et al.*, 1993: 113). Constructivist and interpretative approaches derived from phenomenology view competence as a function of the context in which it is applied, where 'worker and work form one entity through lived experience of work' (Sandberg, 2000: 50). Competence is constituted by the meaning that the work has for the worker in their experience (Stoof *et al.*, 2002; Velde, 1999). Dreyfus and Dreyfus (1986), who used an interpretative approach to investigate competence among pilots and others, found that attributes used in accomplishing work are bound to the work context regardless of the level of competence attained and that in the work situation individuals acquire situational or context-dependent knowledge and skills. Other interpretative studies, with nurses (Benner, 1984) and police officers (Fielding, 1988a, 1988b), have equally demonstrated that attributes acquire context-dependency through individuals' experience of work. One of the advantages of the interpretative approach is that it acknowledges workers' tacit knowledge and skills (Polanyi, 1967), which can be overlooked if competence is treated as context-free since the way people work in practice seldom accords with the formal job description. Tacit competences, not only of professionals (Eraut, 2000) but also of so-called 'unskilled workers' (Kusterer, 1978), can have a determining impact on the success of an enterprise (Flanagan *et al.*, 1993).

In view of the terminological and conceptual confusion surrounding competence, we set out to explore three dominant approaches which began relatively independently, first in the USA, then in the UK and most recently in France and Germany. These approaches are contrasted before proposing a comprehensive holistic typology of competence.

### **The Behavioural Approach: The US Tradition**

White (1959) is credited with having introduced the term competence to describe those personality characteristics associated with superior performance and high motivation. Postulating a relationship between cognitive competence and motivational action tendencies, White defined competence as an 'effective interaction (of the individual) with the environment' and argued that there is a 'competence motivation' in addition to competence as 'achieved capacity'. McClelland (1973) followed this approach and developed tests to predict competence as opposed to intelligence, but subsequently (McClelland, 1976) also described this characteristic underlying superior performance as 'competency', introducing the approach to the consulting firm that became Hay McBer.

Measures of competence were developed as an alternative to using traditional tests of cognitive intelligence because these were held to be poor predictors of job performance, although Barrett and Depinet (1991) defended the predictive power of intelligence tests. The competence approach starts from the opposite end, observing successful and effective job performers to determine how these individuals differ from less successful performers. Competency thus captures skills and dispositions beyond cognitive ability such as self-awareness, self-regulation and social skills; while some of these may also be found in personality taxonomies, competencies are fundamentally behavioural and, unlike personality and intelligence, may be learned through training and development (McClelland, 1998). This tradition has remained

particularly influential in the USA, with competency defined in terms of ‘underlying characteristics of people’ that are ‘causally related to effective or superior performance in a job’, ‘generalizing across situations, and enduring for a reasonably long period of time’ (Boyatzis, 1982; Spencer and Spencer, 1993). The Hay Group *et al.* (1996) demonstrated widespread use of this approach in USA companies in order to raise performance.

This is the tradition followed by Boyatzis (1982), who determined empirically the characteristics of managers that enable them to be effective in various managerial positions, based on a study of 2,000 managers holding forty-one different positions in twelve organizations. Boyatzis proposed an integrated model of managerial competence that explains the interrelationship of these characteristics and their relationship with both management functions and the internal organizational environment. Similarly, Spencer and Spencer (1993) demonstrated the use of the McClelland/McBer job competence assessment (JCA) methodology with an analysis of 650 jobs to propose generic job models. For them, competencies include:

motives, traits, self-concepts, attitudes or values, content knowledge, or cognitive or behavioral skills – any individual characteristic that can be measured or counted reliably and that can be shown to differentiate significantly between superior and average performers, or between effective and ineffective performers.  
(Spencer and Spencer, 1993: 4)

Similarly, noting that different cultures are commonly associated with an emphasis on particular work attributes, Dooley *et al.* (2001) found that Mexican and American trainers listed the same top ten competencies from a list of thirty-nine considered relevant to their training and development activities.

Paradoxically, the use of generic competencies has lived alongside the strategic approach to core competence in the US. Twenty-five years ago, the American Management Association (AMA) identified five clusters of competencies that were believed to be associated with effective managerial behaviour (Hayes, 1979) and these prompted the American Association of Colleges and Schools of Business (AACSB) to promote the competency approach in US Business Schools (Albanese, 1989). More recently, the State Commission on Achieving Necessary Skills (SCANS), established by the US Secretary of Labor, identified ‘generic competencies’ (resources, interpersonal, information, systems and technology) (SCANS, 1992). The link between core competence and generic competencies is made through competency modelling and competency assessment. Competency modelling is used to identify the critical success factors driving performance in organizations (Lucia and Lepsinger, 1999), while competency assessment is used to determine the extent to which individuals have these critical competencies (Spencer *et al.*, 1997).

Since the end of the 1990s, competency-based HRM has become widespread in the US, in relation not only to HRD in general, but also to leadership in particular as well as selection, retention and remuneration (Allbredge and Nilan, 2000; Athey and Orth, 1999; Dubois and Rothwell, 2004; Foxan, 1998; Naquin and Holton, 2002; Rodriguez *et al.*, 2002). In this renaissance, competency has a much broader conception than hitherto, including knowledge and skills alongside the behavioural



or psycho-social characteristics in the McClelland tradition. Even within the predominantly behavioural approach, many conceptions of competency now include knowledge and skills alongside attitudes, behaviours, work habits, abilities and personal characteristics (Gangani *et al.*, 2004; Green, 1999; Lucia and Lepsinger, 1999; Naquin and Wilson, 2002; Nitardy and McLean, 2002; Russ-Eft, 1995).

More comprehensive competence frameworks appearing in the USA incorporate job standards and processes as well as knowledge measured by qualifications (Cooper, 2000; Evers *et al.*, 1998). Competency models have been widely used to align individual capabilities with the core competence of the organization (Rothwell and Lindholm, 1999). A competency framework is typically viewed as a mechanism to link HRD with organizational strategy: 'a descriptive tool that identifies the skills, knowledge, personal characteristics, and behaviors needed to effectively perform a role in the organization and help the business meet its strategic objectives' (Lucia and Lepsinger, 1999: 5). Gangani *et al.* (2004: 1111) similarly argue that 'competency-based practices utilize a competency framework to align the strategic objectives of an organization with its key HR business processes'.

Much of the recent US literature focuses on job-related (functional) competences (Aragon and Johnson, 2002; Boon and van der Klink, 2002), often with associated underpinning behavioural competencies. For example, in the influential leadership competency model developed by Holton and Lynham (2000), six 'competency domains' are identified relating to performance at the organization, process and individual levels. These domains are broken down into 'competency groups' and then further divided into 'sub-competencies'. At the organization performance level, the two competency domains identified are strategic thinking and strategic stewardship, beneath which there are, respectively, four and five competency groups, with further sub-competencies (Collins *et al.*, 2000). Similarly, at the process level, the two competency domains identified are process management and process planning, each broken down further into three competency groups, with further sub-competencies (Baker *et al.*, 2000). At the individual level, the two competency domains, employee performance and employee appraisal, are each further subdivided into four competency groups, with further sub-competencies (Wilson *et al.*, 2000). All of the competencies listed are based on functional job-related standards, rather than behavioural competencies (although some are clearly underpinned by behavioural competencies).

While the behavioural competency approach promoted most notably by David McClelland and Hay-McBer is still much in evidence in the US, a broader conception of competence, which emphasizes also job-related functional skills and underpinning knowledge, is clearly gaining ground.

### **The Functional Approach: The UK Tradition**

Recognizing endemic deficiencies of skill formation in the UK, governments during the 1980s introduced a competence-based approach to VET in order to establish a nation-wide unified system of work-based qualifications. This VET reform was driven by the adoption of a competence-based qualifications framework, which subsequently influenced similar developments in other countries in the Commonwealth and the European Union.

The new vocational qualifications (National Vocational Qualifications, NVQs, in England and Wales, Scottish Vocational Qualifications, SVQs, in Scotland) created under this framework were based on occupational standards of competence, grounded in functional analysis of occupations in a variety of contexts (Mansfield and Mitchell, 1996). Other (non-NVQ/SVQ) vocational qualifications continued to exist alongside. The Management Standards, for example, were developed and tested with over 3,000 managers, across a range of sectors (Frank, 1991). Occupational standards identify key roles, which are then broken down into a number of *units of competence*. These are further sub-divided into *elements of competence* and, for each element of competence, *performance criteria* are defined which form the basis of assessment, with *range indicators* provided for guidance. Occupational standards are firmly rooted in the reality of work (Mansfield, 1993); employers play a leading role in their validation, as do trade unions in unionized sectors. Nevertheless, participation by employers in the formal vocational qualifications system has been far from universal, partly because of a perceived lack of relevance to specific employer needs and partly due to the bureaucracy associated with assessment procedures. Assessment for VQs involves accrediting the competence of individuals against actual performance in the workplace, which was designed to ensure continued relevance to the work situation (Miller, 1991), although there is evidence that assessment fails to capture many of the outcomes of informal learning.

Another criticism of the new VQs related to their apparent lack of adequate theoretical underpinning as the competence-based approach was concerned mainly with demonstrating competence in the workplace and not the systematic acquisition of knowledge. However, underlying knowledge has always played a major part in craft qualifications of the City and Guilds of London Institute and this continued to be the case under the new VQs, as City and Guilds became one of the awarding institutions. The criticism probably also reflects the resistance of educational institutions to a competence-based approach. Much of the early UK literature on NVQs was dominated by academic critiques which were hostile to the competence-based approach *per se* (Bates, 1995; Jones and Moore, 1995). Hyland (1994) described NVQs as fundamentally flawed and inappropriate to current and future education and training needs. Smithers (1993) attacked the underpinning knowledge of NVQs compared with VQs in countries like Germany and did not disguise his opposition to a learner-centred approach. Significantly, the Management Standards developed by the Management Charter Initiative (MCI) had little influence on UK Business Schools (IoM, 1994) in comparison with the adoption of competency by the AACSB in the US.

With a competence-based approach to VET, the emphasis is on functional competence and the ability to demonstrate performance to the standards required of employment in a work context (Knasel and Meed, 1994). The definition of occupational competence provided by the Manpower Services Commission (MSC, 1986) and adopted by *Investors in People* (1995: 41) was 'the ability to perform activities in the jobs within an occupation, to the standards expected in employment'. However, the definition also included 'mastery of skills and understanding' and 'aspects of personal effectiveness'. As Mansfield and Mitchell note, this definition 'appears to include a mix of models: work expectations, input measures (knowledge and skills) and psychological attributes' (1996: 46). Indeed, the original Management



Standards were supplemented by an MCI competency model, defining behavioural performance indicators. Nevertheless, the MSC definition of competence was subsequently adopted as the official Employment Department approach in defining occupational standards as 'a description of something which a person who works in a given occupational area should be able to do...[and] able to demonstrate' (Employment Department and NCVQ, 1991). A government review of vocational qualifications in 1996 (Beaumont, 1996) expanded the definition of competence as: 'The ability to apply knowledge, understanding and skills in performing to the standards required in employment. This includes solving problems and meeting changing demand.'

While the main approach in the UK remains one of functional competence, some employers developed their own competence frameworks for managers or adopted other generic models instead of using the MCI Standards (Carrington, 1994; Hirsh and Strebler, 1994). Some organizations adopted the Hay McBer competency framework in preference to the competences embodied in the Management Standards (Mathewman, 1995; Cockerill, 1989). Diverse competence models have been introduced in relation to competence-based pay systems (Reilly, 2003) and especially for competence-based management development (Strebler and Bevan, 1996).

Hodkinson and Issitt (1995: 149) argued for a more holistic approach to competence in the caring professions, integrating knowledge, understanding, values and skills that 'reside within the person who is the practitioner.' Similarly, Cheetham and Chivers (1996, 1998) claimed to develop a holistic model of professional competence, comprising five sets of inter-connected competences and competencies. Their competence framework comprises five dimensions:

- Cognitive competence, including underpinning theory and concepts, as well as informal tacit knowledge gained experientially. Knowledge (know-that), underpinned by understanding (know-why), is distinguished from competence.
- Functional competences (skills or know-how), those things that 'a person who works in a given occupational area should be able to do...[and] able to demonstrate'.
- Personal competency (behavioural competencies, 'know how to behave'), defined as a 'relatively enduring characteristic of a person causally related to effective or superior performance in a job'.
- Ethical competencies, defined as 'the possession of appropriate personal and professional values and the ability to make sound judgements based upon these in work-related situations'.
- Meta-competencies, concerned with the ability to cope with uncertainty, as well as with learning and reflection.

This framework was applied in an analysis of the future skills needs of managers in the UK undertaken for the Department for Education and Skills (Winterton *et al.*, 2000), and in a modified version (where ethical competencies were subsumed under personal competency, as in the MCI Personal Competency Model) in a study undertaken for the UK government taxation agency, the Inland Revenue (Winterton and Winterton, 2002). This later research into the implementation of management

standards in sixteen organizations found that nine were using the functional competences based on the Management Standards only, two were using behavioural competency frameworks and five had combined functional competence and behavioural competency to introduce hybrid competence models. This evidence suggests that in the UK, too, the concept of competence is being broadened to capture underlying knowledge and behaviours rather than simply functional competences associated with specific occupations.

### **A Multi-dimensional and Holistic Approach: France, Germany and Austria**

In mainland Europe, two other approaches are evident, exemplified by France and Germany, which each adopted competence in their approaches to HRD more recently. Most other European countries have followed the UK, French or German approaches (Winterton *et al.*, 2005), so confining the discussion to these nonetheless permits a wider generalization of the issues.

The competence movement in France began during the 1980s, and became particularly influential from the 1990s. The emergence and development of competence has passed through several stages: after the first appearance of the idea within organizations, came the development of instruments and tools for HRM practitioners and consultants, then the conceptualization of competence as a theoretical concern, and finally more critical approaches. The major development of competence-based practice appeared in 1984, linked to the need to develop new competences and the role of enterprises in developing them (Cannac and CEGOS, 1985). Gilbert (2003) traces the history of the management of competence *à la française*, which carries the imprint of national culture (in a context of a right to vocational training and the important role of collective agreements), so that the strong global influence of the McClelland approach is much less evident in France.

The state encouraged a competence-based approach in 1993 when the national employment agency, ANPE (*Agence nationale pour l'emploi*), modified its framework of occupations (*Répertoire Opérationnel des Métiers et des Emplois*) to a competence-based system, which stimulated widespread academic commentary (Le Boterf, 1994; Levy-Leboyer, 1996; Merle, 1996; Minet *et al.*, 1994). Enterprises adopted individual evaluation of competence instead of relying upon qualifications (Durand, J. P., 2000), increasing flexibility but sometimes jeopardizing job security (Arnaud and Lauriol, 2002). Further impetus was given to the competence movement during the 1990s when the state introduced a right for individuals to have their competences assessed (*bilan de compétences*) independently to provide a basis for personal development in their occupation (Joras, 2002). The concept of competence featured increasingly in HRM since the mid 1990s, both in research and practice and has been associated with several different normative models and various practices (Minet *et al.*, 1994). Competence also became more focused on HRD (Doussset, 1990) and the instruments for developing and measuring competences began to appear (Dietrich, 2003; Klarsfeld and Roques, 2003; Paraponaris, 2003; Trépo and Ferrary, 1998). Competence-based pay was introduced in some heavy industries (Brochier and Oiry, 2003; Klarsfeld and Saint-Onge, 2000). The competence movement gained further ground after the

employers' association MEDEF (*Mouvement des Entreprises de France*) launched *Objectif compétences* (MEDEF, 2002) encouraging the adoption of competence approaches in enterprises and further stimulating academic interest (Brochier, 2002; Dupray *et al.*, 2003; Klarsfeld and Oiry, 2003).

Haddadj and Besson (2000) note that, from an epistemological perspective, the logic of competence is polarized into two distinct directions: an individual approach, centred on individual behaviours, and a collective approach, centred on building the required competence in an organization. Most definitions of competence fall somewhere between two extremes: competence as a universal attribute, such as literacy, and competence in terms of individual capacity, which is found only in the work context (Klarsfeld, 2000). Several French authors have compared the French approach with the 'Anglo-Saxon' (often exclusively American) approach. The French approach is generally more comprehensive, considering *savoir* (*compétences théoriques*, i.e. knowledge), *savoir-faire* (*compétences pratiques*, i.e. functional competences) and *savoir-être* (*compétences sociales et comportementales*, i.e. behavioural competencies). Tremblay and Sire (1999) note a strong concordance between the UK use of functional competence and the French *savoir-faire* and between the USA use of soft competences, as in the Hay approach, and the French *savoir-être*. Dejoux (1999) comments that in France, while the notion of individual competence has not yet generated a general, empirically validated theory, there is nonetheless a consensus definition based on the minimal three dimensions already mentioned. These three dimensions rest on the concepts of knowledge (*savoir* and *connaissance*), a component based on experience (*savoir faire* or *savoir agir*) and a behavioural component (*savoir être* or *la faculté de s'adapter*). According to Cazal and Dietrich (2003) this *triptyque* is largely confined to HRD, although it has occasionally appeared in the vocabulary of those concerned with strategy (Durand, T., 2000).

While competence (*Kompetenz*) was always implicit in the German dual system of VET, the main emphasis was on specifying the necessary learning inputs, rather than outcomes, to master a trade. Occupational competence is rooted in the concept of *Beruf* (usually translated as occupation, but encompassing the traditions of the craft from the trade and craft guilds), which defines vocational training theory and associated pedagogy. Within this tradition, modularization and generic competences are regarded with suspicion since these may damage the unity of the craft. From the 1980s, the concept of 'key qualifications' (*Schlüsselqualifikationen*) appeared, including personal competences, such as 'ability to act autonomously and to solve problems independently', 'flexibility', 'ability to cooperate', 'practical ethics and moral maturity'. While *Qualifikation* signifies the ability to master concrete (generally professional) situation requirements (so is clearly application-oriented), *Kompetenz* refers to the capacity of a person to act and is more holistic, comprising not only content or subject knowledge and ability, but also core and generic abilities (Arnold *et al.*, 2001: 176).

In 1996 the German education system adopted an 'action competence' approach, moving from subject (inputs) to competence (outcomes) and curricula specifying learning fields (*Lernfelder*) rather than occupation-related knowledge and skills content (Straka, 2004). A standard typology of competences now appears at the beginning of every new vocational training curriculum, elaborating vocational

action competence (*Handlungskompetenz*) in terms of domain or subject-competence (*Fachkompetenz*), personal competence (*Personalkompetenz*) and social competence (*Sozialkompetenz*). Domain competence describes the willingness and ability, on the basis of subject-specific knowledge and skills, to carry out tasks and solve problems and to judge the results in a way that is goal-oriented, appropriate, methodological and independent. General cognitive competence (*Sachkompetenz*), the ability to think and act in an insightful and problem-solving way, is a prerequisite for developing *Fachkompetenz*, which therefore includes both cognitive and functional competences. Personal competence describes the willingness and ability, as an individual personality, to understand, analyse and judge the development chances, requirements and limitations in the family, job and public life, to develop one's own skills as well as to decide on and develop life plans. It includes personal characteristics like independence, critical abilities, self-confidence, reliability, responsibility and awareness of duty, as well as professional and ethical values. *Personalkompetenz* therefore includes both cognitive and social competences. In some accounts, self-competence (*Selbtkompetenz*) is distinguished, as the ability to act in a morally self-determined humane way, including the assertion of a positive self-image and the development of moral judgement. Social competence describes the willingness and ability to experience and shape relationships, to identify and understand benefits and tensions, and to interact with others in a rational and conscientious way, including the development of social responsibility and solidarity. *Sozialkompetenz* therefore includes both functional and social competences. A balance of subject, personal and social competence is the prerequisite for 'method and learning competence' (*Methodenkompetenz* and *Lernkompetenz*). Method competence is an extension of *Sachkompetenz* and *Fachkompetenz* arising from the implementation of transversal strategies and processes of invention and problem-solving, while learning competence equates to the meta-competence 'learning how to learn'. There are currently 350 occupational profiles in Germany defined to a common format elaborating the competences required in terms of the above.

Austria adopted a similar approach to Germany in respect of the concept of key qualifications (*Schlüsselqualifikationen*), defining these as transversal functional and professional qualifications, including non-subject specific abilities and aspects of personality formation (Archan and Tutschek, 2002). These are grouped under three headings: cognitive, social and personal competences. Cognitive competence (*Sachkompetenz*) is defined as knowledge, skills and abilities that may be used in the specific occupation as well as transversally, and skills and abilities for mastering tasks and developing appropriate problem-solving strategies. Thus theoretical thinking, method competence (including learning techniques) and general vocationally oriented skills such as IT, workplace safety and business management are subsumed under *Sachkompetenz*. Social competence (*Sozialkompetenz*) is largely concerned with dealing with others and is defined as the ability and willingness to cooperate, to interact with others responsibly and to behave in a group and relationally oriented way. Personal competence (*Selbstkompetenz*) comprises key qualifications for dealing with oneself and is defined in terms of ability and willingness to develop personally, as well as to develop skills, motivation and attitudes to work and to the wider world.

### Towards a Typology of Competence

This review has argued that one-dimensional frameworks of competence are inadequate and are giving way to multi-dimensional frameworks. Functional and cognitive competences are increasing being added to the behavioural competencies in the USA, while in the UK cognitive and behavioural competences are being added to the occupational functional competence model. France, Germany and Austria, entering the arena more recently, appear to be adopting from the outset a more holistic framework, considering knowledge, skills and behaviours as dimensions of competence, as have most of the other countries that have adopted competence-based vocational training.

From this analysis, we argue that a holistic typology is useful in understanding the combination of knowledge, skills and social competences that are necessary for particular occupations. The competences required of an occupation include both conceptual (cognitive, knowledge and understanding) and operational (functional, psycho-motor and applied skill) competences. The competences more associated with individual effectiveness are also both conceptual (meta-competence, including learning to learn) and operational (social competence, including behaviours and attitudes). The relationship between these four dimensions of competence is demonstrated in Figure 1 which forms an over-arching framework for developing a typology of competence.

The first three dimensions, cognitive, functional and social competences, are fairly universal and are clearly consistent with the French approach (*savoir, savoir faire, savoir être*) as well as the longstanding KSA (knowledge, skills and attitudes) of the training profession. Thus, knowledge (and understanding) is captured by cognitive competence, skills are captured by functional competence and ‘competencies’ (behavioural and attitudinal) are captured by social competence. Meta-competence is rather different from the first three dimensions since it is concerned with facilitating the acquisition of the other substantive competences. It should also be recognized that, while the distinction between these dimensions can be made analytically, in practice, not only must a person have underlying knowledge,

	<i>Occupational</i>	<i>Personal</i>
<i>Conceptual</i>	Cognitive competence	Meta competence
<i>Operational</i>	Functional competence	Social competence

**Figure 1.** Typology of competence.

functional skills and appropriate social behaviour in order to be effective at work, the competences required of an occupation are also invariably described in multi-dimensional terms.

The holistic competence model is perhaps better represented as a tetrahedron, reflecting the unity of competence and the difficulty of separating cognitive, functional and social dimensions in practice. In Figure 2, the holistic competence model is represented as a tetrahedron in plan view. Meta-competence is presented as an over-arching input that facilitates the acquisition of output competences at the base of the tetrahedron. Practical competences may be thought of as situated on the faces of the tetrahedron, combining elements of the dimensions of competence in varying proportions.

However it is represented, the multi-dimensional holistic competence approach is becoming more widespread and offers the opportunity of better aligning educational and work-based provision as well as exploiting the synergy between formal education and experiential learning to develop professional competence.

## Conclusion

The challenge is to develop a consistent and coherent typology of competence in a context where even within countries there is apparent diversity in the approaches. Each of the four dominant approaches has particular strengths. The traditional American approach has demonstrated the importance of individual characteristics and the use of behavioural competence as a means of developing superior performance. The mainstream UK approach has shown the value of occupationally defined standards of functional competence and their applicability to the workplace. The approach adopted in France and Germany demonstrates the potential of a multi-dimensional and more analytical concept of competence. Moreover, there are signs of convergence in national approaches to competence, not only within Europe but also between the European and American models, suggesting that there is value

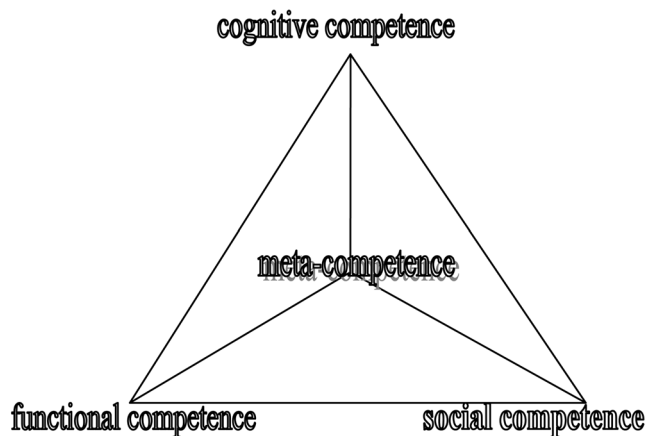


Figure 2. Holistic model of competence.



in a multi-dimensional approach for developing a more global understanding of the term.

This is a tentative effort to clarify the ‘fuzzy concept’ based on an analysis of current practice in some countries that have made particular progress with competence in different ways. It is limited in both breadth and depth but forms a starting point for developing a comprehensive typology that will permit greater transparency and mobility. Inevitably, further research is required, extending the breadth of countries and to complete the work begun, first with all twenty-five EU Member States and then beyond the EU, since the challenges are global rather than European. It is necessary to extend the depth of analysis, investigating competence in greater detail in specific occupations, since it is at this level that competence has most concrete meaning. There is also a need to address the rift between the rationalist approaches that dominate in VET systems and interpretative approaches that are becoming more widespread among HRD academics. While these approaches appear dichotomous and incompatible, developing a common ground that draws upon the strengths of each would be a major advance for both theory and practice, the ultimate beneficiaries of which will be those participating in learning at work.

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