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The concept of competence in the development of vocational education and training in selected EU member states – a critical analysis

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Abstract

This contribution follows the descriptive review of Weigel & Mulder (2006) regarding the use of the competence concept in the development of vocational education and training in England, France, Germany and the Netherlands. The purpose of this contribution is to review the critical analyses brought forward by various authors in this field. This analysis also remarks on the

most important theories and critiques on the use of the competence concept in the abovementioned states,

The systems of vocational education within the four states covered in this study are: the National Vocational Qualifications in England, the approach to learning areas in Germany, the ETED and the bilan de compétences in France and the implementation of competence-based vocational education in the Netherlands; and are the respective focal points for the critical assessments of the competence concept presented here. These critiques encompass such aspects as the lack of a coherent definition of the concept of competence, the lack of a one-to-one relationship between competence and performance, the misled notion that employing the concept of competence decreases the value of knowledge, the difficulties of designing competence-based educational principles at the curriculum and instruction levels, the underestimation of the organisational consequences of competence-based education , and the many problems in the field of competence-assessment.

The reference list at the end of this manuscript is a combination of the references for both the descriptive review (mentioned previously) and this critical analysis. Therefore some references are not attributable to this article.

Introduction

During the last decades the competence concept has been used for the development of vocational education and training. This is due to the popularity of the concept within, and also outside of, the European Union. Weigel and Mulder (2006) indicated that the first contributions to the academic field of competence dated back to the 1970s, however, this was by no means the starting point of the history, and use of, the concept of competence.

The first use of the concept occurs in the work of Plato (Lysis 2I5 A., 380 B.C.). The root of the word is ikano, a derivative of iknoumai, which is to arrive. The ancient Greek language had an equivalent for competence, which is ikanótis (ικανότης). It is translated as the quality of being ikanos (capable), to have the ability to achieve something; skill. Epangelmatikes ikanotita stands for professional/vocational capability or competence. This should not be confused with dexiotis (δεξιότης) which relates more to cleverness, like in the expression '*αμαθία μετά σωφροσύνης ωφελιμώτερον ή δεξιότης μετά ακολασίας*' (Lit: ignorance together with wisdom (is) more useful than cleverness together with immorality).

But even further back, the "Code of Hammurabi" (1792-1750 B.C.) mentions a comparable concept; within the "Epilogue"; a text translated into French reads: 'Telles sont les décisions de justice que Hammurabi, le roi compétent, a établies pour engager le pays conformément à la vérité et à l'ordre équitable.'

Competence even appeared in the Latin language in the form of 'Competens', which was conceived of as being able and allowed by law/regulation, and in the form of 'Competentia'; perceived as (cap)ability and permission. By the Sixteenth Century the concept was already

recognised in English, French and Dutch; the use of the western European words ‘competence’ and ‘competency’ can be dated to this time.

So it is clear that the concept of competence has quite a history, and unsurprisingly so, since to be professionally competent; being sufficiently capable and allowed to perform certain tasks, has been an aspiration throughout the ages.

Nevertheless, the institutionalised use of competence in the development of vocational education is a recent phenomenon and appeared inter-mingled with other innovations like the introduction of self-managed learning, the integration of theory and practice, the validation of prior learning, and new theories of learning, such as authentic learning, social constructivism and knowledge construction. The competence concept is therefore concerned with the meaningful objectives and content of learning that will engender the personal development of students and position them within the domain of knowledge that can best prepare them to function effectively in society . There are various definitions in existance for the concept of competence because of its ambiguity in relation to learning theories and other innovative approaches to learning.

To begin with here we will describe these competence definitions and then review the critiques of the use of the concept. This is a follow-up to the analysis of Biemans et al (2004) which was based on personal experiences of the implementation of competence-based vocational education in the Netherlands. We will then attempt to draw comparisons from these critiques and formulate some conclusions.

Competence: approaches and definitions

There are various approaches and definitions of the concept of competence. In this section we will address both by giving examples of approaches and definitions that can be found in the literature.

In terms of approach, there have been three main traditions in competence research since the middle of the last century (Norris, 1991; Eraut, 1994; Wesselink, et al, 2005): the behaviourist, the generic and the cognitive.

The *behaviourist* approach stresses the importance of observing successful and effective job performers and determining what differenciates them from their less successful counterparts. This approach was promoted by McClelland and the consulting company that evolved into Hay-McBer. The Hay Group used this approach to competence in many companies in order to raise performance. McClelland's competency approach (1973) advocated the use of the concept of competence, rather than the concept of intelligence, in testing and showed how to identify competencies by means of behavioural-event interviews (McClelland, 1998). Competencies in this respect are acquired through training and development (McClelland, 1998) and competence is based on the description of observable behaviour or performance in situ. The definitive characteristics of the behavioural approach are demonstration, observation and assessment of behaviour. Competencies are thus the characteristics of a person that are related to superior performance in a job and can be common across situations (Delamare & Winterton, 2005; Spencer & Spencer, 1993; Gonczi, 1994). The behaviourist approach has many American connotations because the theory of operant conditioning originated in the U.S.A. But to state that the behaviourist approach is typically American is too simplistic as it has been used widely outside North America and other perspectives (e.g. humanistic approach to development, education, and learning) also have strong U.S. roots. Further testament to the breadth of this approach is the regular criticisms levelled at the harmonization, or Bologna,

process in European higher education that is said to be based upon a behaviouristic competence model (e.g. Hyland, 2006).

The *generic* approach is aimed more at identifying the common abilities that explain variations in performance. Again, in this approach, the most effective performers and their distinguishing characteristics are identified (Norris, 1991). Then, through statistical analysis, the main and generic characteristics of top performers are defined. Competencies determined in this way can be applied to different professional groups. Gonczi et al (1995) confirmed the diverse forms that generic competencies could take depending on the workplaces context. Hager (1998) highlights two crucial features of generic competencies: firstly they serve to direct attention onto broader approaches to competence, and secondly, they are sensitive to work context changes. Competence, in this sense, is '…more about framing an overall performance that is appropriate to a particular context. It is not about following simplistic recipes' (Hager, 1998; 533). Research into the big five personality dimensions, first elaborated to explain the variations in job performance (Barrick & Mount, 1991), as well as the research on generic and basic skills in the field of curriculum development (Nijhof & Mulder, 1989; Mulder, 1989; Mulder & Thijsen, 1990) are good illustrations of the generic approach.

The definition of competence in the *cognitive* approach includes all of the mental resources of individuals that are used to master tasks, acquire knowledge and achieve a good performance (Weinert, 2001). It is often used simultaneously with intelligence or intellectual abilities. The classical cognitive approaches focusing on general cognitive competencies include psychometric models of human intelligence, information processing models and the Piagetian model of cognitive development. A more narrow interpretation of this cognitive approach focuses on specialized cognitive competencies. These specialized competencies refer to a cluster of cognitive prerequisites that individuals must possess to perform well in a special area. Another interpretation of the cognitive approach is to differentiate competence and performance; first stressed by Chomsky (1980). He defined linguistic competence as an ability

to acquire the mother tongue; it is rule-based language learning and language use which is necessary for linguistic performance. Currently the competence-performance concept has been categorically expanded to encompass 'social' or 'emotional' competencies, in which 'competence' has replaced the original term, 'intelligence'. Needless to say, the cognitive approach to competence development is juxtaposed with the social-constructive approach advocated by e.g. Hodkinson and Issitt (1995) who formulated major guidelines to support the development of competence-based education. The guidelines aim to use competencies effectively in education by underlining essential aspects such as the high importance of mentoring, the continuous dialogue between student and mentor, the necessity of performance in practice as well as the multidisciplinary tasks the student has to cope with. In general, the social-constructive approach stresses the similarity between the competencies needed for successful performance in society (such as learning competence, cooperation, problem solving, information processing, coping with uncertainty, decision-making based upon incomplete information, risk assessment) and collaborative competence development (as a synonym of social-constructive learning). We need to add here that, within the constructive approaches to learning, there is again a wide variation in conceptualization. But these theories also share common characteristics; see for instance the publication on models of innovative knowledge communities by Paavola, Lipponen and Hakkarainen (2004). They review the work of Nonaka and Takeuchi (1995) on knowledge creation, stressing the importance of the interaction between tacit and explicit knowledge, the expansion learning theory of Engestöm (1987; 1995) and the model of Bereiter (2002) on knowledge building. They conclude that there are major similarities between these theories. The work of Billett (1994) and Billett, Ehrich & Hernon-Tinning (2003) can also be mentioned here as having a social-constructive character in its examination of knowledge construction in the workplace, focussing on personal agency in socio-organisational contexts.

Coherence in the concept of competence?

The three research traditions mentioned above are identified as the most comprehensive, although there are many other attempts to categorise the research about competence and to define the concept of competence. For instance, Weinert (2001) distinguishes nine theoretical approaches towards competence: general cognitive ability, specialized cognitive skills, competence-performance model, modified competence-performance model, motivated action tendencies, objective and subjective self-concepts, action competence, key competencies and meta-competencies. The concept of competence used in the PISA-VET feasibility-study comprises cognitive competence (knowledge), functional competence (skills), social competence and self competence (Achtenhagen, 2005). Ellström developed the concept of competence in relation to occupations and made a distinction between formal competences, officially demanded competence, competence in use, actual competence and competence required in the job (Ellström, 1997).

The trend towards competence-based ICVT (Initial and Continuing Vocational Training) development is not only observed at the national level within countries but also at an international level. Take, for example, the OECD and the development of an international assessment framework, PISA. The framework of PISA can be described as a generic approach to competence with a special focus on key competencies. DeSeCo (OECD Program Definition and Selection of Competencies) defined the key competencies needed in daily life that are common across cultures (OECD/DeSeCo/Rychen, 2003). Following the definition of DeSeCo, key competencies must fulfil several conditions: Firstly they should be valued in relation to economic and social purposes. Secondly they should bring benefits across a range of contexts including the labour market, private relationships, and political engagement. Finally they should be important for all individuals; meaning competencies must not be trade or occupation specific. The framework of DeSeCo and the OECD represents a single frame of reference for

school-based and adult competencies' assessments because it applies, not only to competencies that need to be taught at school, but to those that can be developed throughout a lifetime.

Another EU-level example of competence framework construction is the ECVET (European Credit System for VET) and the ECTS (European Credit Transfer System in Higher Education). The goal here is to achieve enhanced cooperation in vocational training and harmonisation of higher education by the creation of a set of reference levels that form the basis for the ECVET and the ECTS. As reference levels should be described in terms of learning outcomes, a typology of 'knowledge, skills and competencies' has been developed (Winterton et al 2005). Knowledge in this typology is captured as cognitive competence, skills are captured as functional competence, and attitudes and behaviour as social competence. Meta-competence is incorporated within social competence. In some countries the differences according to the three dimensions are based on terminology only, but in other countries they are fundamental. The challenge for ECVET is to develop a consistent and coherent typology of knowledge, skills and competence.

One such attempt at coherence through competence is the Tuning-project to facilitate the ECTS. It aims at developing a common methodology to expand the European framework of qualifications in higher education within the context of the Bologna process (González & Wagenaar 2005). The Tuning-project proposes programs based on learning outcomes which are described in terms of subject specific and generic competencies. Although the former are undoubtedly important, the Tuning-project nevertheless stresses the importance of generic competencies or transferable skills because they are of relevance for the preparation of students for their future roles in society. In the Tuning-project, competencies serve as reference points for the design of curricula and evaluation in order to make study programs comparable. As said before, this approach is heavily criticised by Hyland (op cit), but also by Hager (2006) who states that '…performance outcomes can be specified precisely, and that the Tuning learning

outcomes are a species of performance outcomes. However, by contrast, competences cannot be specified precisely in this way. So the Tuning Project, by mistakenly equating learning outcomes and competences, gives the latter a false objectivity.'

Given this difference of opinion documented above, a legitimate question to ask is whether there exists any coherence in the concept of competence. We will examine this question further by reflecting on a number of core definitions posited by authors from the member states listed earlier. Then we will go further and present ways these states use the concept for policy-making and practice in VET.

Eraut defined competence as: 'The ability to perform the tasks and roles required to the expected standards' (Eraut, 2003, 117). This definition expresses competencies as the mastering of socially expected standards. Arnold et. al. (2001) state that competence refers to the capacity of a person to act. In this respect competence is seen as being holistic and it comprises not only content or subject knowledge and ability, but also core and generic abilities. Mandon & Sulzer (1998; 2) contend that competence needs to be understood as knowledge, abilities and qualities in action. Mulder, based on the comparison already mentioned, and taking a multitude of perspectives of relevant VET, HRD and HRM researchers into account came to the following working definition: competence is seen as the capability of a person to reach specific achievements (Mulder, 2001). Cedefop, the Centre for the Development of Vocational Training defines competence as the capability to use knowledge in practice.

When it comes to vocational education and training, capability and eligibility are both relevant. The purpose of education is to make students capable of performing certain tasks incumbent of a given occupation or profession. It should also make students eligible for a diploma that serves as a meretricious indication that they have reached a threshold qualification level and can perform the relevant tasks of a given occupation or profession.

There have been diverse attempts amongst researchers to define the concept of competence. Based on a wider review of these definitions, we distinguished the following dimensions of competence (Mulder, 2002), which encapsulate the meanings presented above:

- Peripheral ability (as competency) versus core ability (as core competence)
- Contextual dissoluteness versus situational attachment of competence
- Orientation of competence towards functions versus roles
- Representation of competence in terms of knowledge versus ability
- Focus of competence on behaviour versus capability
- Person versus system as a carrier of competence
- Scope of competence as specific versus general
- Learnability versus unchangeabilty of competence
- Performance orientation versus development orientation of competence

Therefore it can be concluded that the concept of competence is multi-dimensional, and specific use of the concept depends on the context of the users.

Problems regarding the use of competence in selected countries

Now that the conceptual background of competence has been explored, the question is which problems different countries face in using the concept in the development of VET. A collection of descriptions on competence use in VET systems in different countries has already been made by Arguelles & Gonczi (2002) focusing on Mexico, Australia, Costa Rica, France and New Zealand. In their review Arguelles & Gonczi illustrated the difficulties of developing standards for competence development and assessment, the problems of implementation and the lack of scholarly literature on the impact of CBET on economic development.
We will attempt to illustrate the major criticisms regarding the use of the concept in the European Union. As said, the focus will be on England, Germany, France and the Netherlands.

A new approach to VET, based primarily on competence-based outcomes, was introduced in the UK in the 1980s (Winterton et al, 2005). The vocational qualifications that were created under the new framework were known as National Vocational Qualifications (NVQ). The main characteristic of the NVQs is that they are defined in terms of outcomes, demonstration and assessment rather than in terms of the learning process leading up to them (Eraut 2003). Since their introduction the NVQs have had to cope with several criticisms and problems.

The most relevant and frequently cited critiques of the NVQs are its purely outcome-based approach. This is related to the strict distinction between learning processes and assessment in the NVQ. As the NVQ concentrates on assessment, it leaves out elements like mode, location or duration of learning (Smithers 2002). The NVQ is reproached for concentrating on assessment and only partly considering the content, but leaving open the other major areas i.e. aims, methods and evaluation. This contradicts the idea that learning does matter and that it affects the nature of competence that individuals build up (Oates, 2004; Eraut, 1994, Roe et al., 2006). By concentrating only on assessment and not on the learning process it is argued that one cannot really build up new qualifications for workers. Doing a sample Eraut (2003) found that from over 600 candidates, only 28% of their learning time was spent on developing new competence; the rest of their time was spent obtaining evidence of their existing competence. Thus the NVQ failed in its major goal of being a measure to support qualification development. The NVQ critic Smithers stated: “At best NVQs accredit prior learning at the workplace” (Smithers, 1999, 147). As it is only concentrated on assessment, there is doubt surrounding the ability of the NVQ to act as a legitimate means of qualifying workers better. Barnett points out that working with competencies in this way even reduces the authenticity of human action (Barnett 1994). This approach neglects the fact that action is related to thought, understanding and reflection.

Moreover, the NVQ is criticized because of the notion of ‘competence’ itself and its use within the NVQ. Competence is reduced to successfully demonstrating skills and abilities (Ertl, 2003,

79). It is argued that competence cannot be captured by generic descriptions. 'By failing to characterize key, generative components of competence, the units may fail to discriminate between individuals whose capacity to perform in a wide range of settings within an occupational area is strongly contrasting' (Oates, 2004, p.15). That means that two individuals may be able to meet the requirements of the units in the NVQ but still their performances on the job may differ significantly from each other. Although different performances in different occupational settings can be described with the same generic descriptions, it does not necessarily mean that the same or similar underlying competence is responsible. The generic use does not guarantee that competence in one context can be readily transferable to another (Eraut, 2003, 118).

Besides this, there is also a practical problem with the implementation of competence in the NVQs. Vocational qualifications are not in line with the opportunities of the workplace. Smithers (2002) points out that the NVQs have an ambiguous relationship with the world of work. They operate to standards set by employers but still in practice they are often regarded as part of the employee's self-development. Trainees with an NVQ-degree found that it did not improve their situation in terms of getting a job or being paid better. While it is an easy path from GCSEs to A-levels to higher education in England, the transition from school to employment is difficult.

However, a recent study by the Department for Education and Skills partly contradicts this point of view (Roe, Wiseman & Costello, 2006). Some of the conclusions of this empirical study were that the understanding of NVQs amongst English employers is still limited and that NVQs are used by fewer people than traditional qualifications. But the study also revealed that the understanding of NVQs - though still limited - is growing. Most interestingly, the study disputes the criticism that NVQ does not contribute to skills development because, in practice, NVQ delivery usually involves training, often by external providers.

Next we will describe the problems facing the introduction of the learning area approach in Germany. This approach was implemented in Germany in 1997. Learning areas are thematic units that are defined by targets, content, a teaching time specification, and the performance of professional tasks and actions (KMK, 2000, 14). Important characteristics are that learning areas should be derived from occupational fields, they should be related to work and business processes and they should describe competencies (Bauer & Przygodda, 2002, 2).

The approach towards the theory of learning areas is generally well received. Still there are some criticisms and two main arguments against this approach. The first criticism is that the concept favours learning areas over the classically taught subjects and that thus the order of knowledge that "subjects" provided will be lost (Reinisch 1999). Secondly it is said that the educational meaning of the vocational schools will be neglected if the concentration is too narrowly concentrated on professional activities (Rößler 2000; Dubs 2000).

More than this general criticism there are debates about the recommendations of the KMK towards the concrete implementation of the learning areas in the curriculum.

It is criticized by many authors that the concept of learning areas was implemented by the KMK without prior consultation with researchers and specialists for education and competence (Dubs, 2000; Lipsmeier, 2000; Lisop, 1999; Rößler, 2000).

The definition of action competence and other central notions like the one of learning area is not described adequately by the KMK (Straka, 2005; Lisop, 1999; Breuer 2005). There is no explanation of how it is possible to recognize when the goal of competence is achieved. So the definition is neither useful for diagnostic reasons nor for the development of educational standards. A survey showed that teachers at vocational schools have problems identifying the main ideas of the learning area approach because the recommendations of the KMK do not show adequate definitions (Steinemann & Gramlinger, 2003). Moreover, the teachers had neither enough time to prepare the learning area concept, nor were they given the support they

would have needed to implement it as intended by the KMK (Steinemann & Gramlinger, 2003; Dubs, 2000; Kremer & Sloane, 2001).

The description of the objectives of the learning areas is also criticised because some of the objectives are only seen after the vocational training, which means that no real assessment during the initial VET period is possible (Straka, 2005, 10). A further problem of the learning area approach is that the examinations in VET, for which the social partners from the economy are responsible, are focused exclusively on knowledge and skills but not on competence (Dubs 2000, 31; a more elaborated version of the problems of implementing the learning areas: Kremer & Sloane 2001, 24). This contributes to the problems of introducing the learning area approach.

Regarding the further development in the German system, in June 2002 the Federal Ministry of Education and Research decided to establish national standards of education but up to now it remains unclear how these standards can be realized and assessed in VET (e.g. Sloane & Dilger, 2005).

The competence concept in France is illustrated by a sociological work analysis method, the ETED, to study occupations and to formulate competencies that are relevant for VET (Mériot, 2005). Competence development has a double focus in this approach: the individual who tries to master a certain occupation and the structural characteristics that determine the way in which occupations develop. Furthermore in France, the use of the competence concept is presented by the bilan de competences, a system based on cooperation between social partners and the state authorities with the meaning to develop competencies of workers (Gutschow, 2001).

A practical problem with the ETED is that the analysts have no ability and no credibility for the assessment of the companies they visit (Mériot, 2005, 290). So they cannot state which competencies are necessary or what makes someone competent at a particular task. On the

contrary, employers think that a few tasks can show the competence of their employees – e.g. a secretary is supposed to be able to write more than thirty words per minute.

A further problem is that ETED is used in artificial situations although it refers to actual professional contexts, meaning performance is assessed in simulated professional contexts for diplomas. But in this way they cannot guarantee that the same person will be competent in an actual professional context. This result is also confirmed by Holmes (2004) who noticed that a competence description model cannot be simultaneously descriptive and evaluative.

This issue is relevant because in France they are actually looking for a way to define and standardize competence descriptions. The aim is to have a single definition of competence which should be relevant for any use (Mériot, 2005).

Regarding the system of the bilan de compétences there are four main critiques. Firstly it is stated that documents (i.e. the portfolios) just refer to school and VET certificates but leave out the acquisition of informal competencies (Käpplinger, 2002, 14). This contradicts the basic assumption of the law which states that informally acquired competencies should also be assessed and certified. Further it is said that for the assessment tests were mainly used instead of participative instruments. The tests were preferred because they are supposed to be more objective than participative methods. The critics say that by primarily using tests the formative intention of the law lags behind a summative one. Another problem is that the addressees of the portfolio are not the only the people taking part in the bilan. The intention of the law is that the portfolio is a property of the candidates. In reality, however, administrators, employers, managers etc., who asked their employees to do the bilan, get insight into its results. Finally it is said that there are communication problems between the centre de bilan and the persons doing the bilan (Drexler, 1997, 239). These problems start with the identification of competencies. If the people from the centre de bilan do not know enough about the specific occupation of the candidate they are thus unable to value the competencies needed for this occupation. Mostly the centres do not have sufficient time to go thoroughly through the

biography and professional situation of the person asking for the bilan. The consequence is that the candidates disagree with the portfolio because they misunderstand its content. In spite of the critiques all actors want to continue with the bilan. This shows that the objectives of the bilan represent major needs of companies and employees. Thus the bilan is an important basis for further development towards the recognition of competencies in France, although its effects lag behind its legal objectives (Gutschow, 2001, 132).

As for the Netherlands, the evaluation reports about the Law on Vocational Education (the WEB), published five years after its implementation, concluded that the policy concept behind WEB was not compatible with the requirements of a knowledge-based economy (Nieuwenhuis & Shapiro, 2004, 80). Vocational education policy should put a greater emphasis on flexibility and expertise of colleges of vocational training ('Regionale Opleidings Centra, or ROC's') to enable them to organise pathways towards competence of young professionals. Furthermore, the research groups concluded that the instruments in the WEB were causing a dispersed supply of courses, not delivering the expected flexibility, the autonomy was restricted at institutional level by too many regulations, and the colleges were not able to use their possibilities.

Currently, the development of vocational education is dominated by the implementation of competence-based education. Although many institutions in the Netherlands claim to have a competence-based curriculum, there is a lot of window-dressing going on. In various cases only superficial changes have taken place and learning processes have not changed (Wesselink et al, 2005). Therefore, a matrix for competence based vocational education has been developed, by which VET experts can assess the extent to which complete training programs are competency-based. The matrix consists of eight principles, and four levels of implementation (Wesselink et al, 2000).

The main critiques of the use of competence in the development of vocational education and training are the following. Although this was not intended, knowledge, skills and attitudes are divided again in the competence-based qualification structure. Competencies are being emphasized so strongly that the knowledge component in programs tends to get too little attention. General subjects are difficult to integrate according to the teachers of those subjects. Furthermore there are problems with the tendency of a reduction of the mastery of basic skills, costs of assessments, the difficulty of using the concept at lower levels of VET, the decreasing lack of information and instruction teachers provide, adjusting the school organization, and varying learning trajectories that make educational programming more difficult.

Comparison of critiques

Because of the diversity in the national approaches towards the implementation of competence it is also difficult to compare critiques. The most pressing problems regarding the implementation of competence-based VET development are highlighted here.

Place Box 1 about here.

1. *England.* The major critiques are that the competence approach is largely behaviouristic, that the emphasis on competence assessment is unbalanced, and that it frustrates learning and development more than it supports it. The use of the competence concept is reduced to assessment and the ability to successfully demonstrate skills and abilities. Furthermore, a critical comment is that competence is formulated in terms that are too general, which means that they do not have any discriminative power in

assessments. And apart from that, the link between competence and performance is not direct. Various competencies can influence certain performance, and certain competencies can influence various fields of performance.

2. *Germany.* The main critiques are aimed at the superficiality of competence fields. They should be analyzed more thoroughly, directed towards the analysis of performance requirements. There is also a fear that the logical order of knowledge domains (traditionally known as subjects) may get lost together with the educational meaning of vocational schools. In Germany, there is also a question as to how to determine whether a competency is achieved or not. Another general problem is that the development of competence takes a long time, and that some competencies are only applied after graduation, which makes it difficult to assess them during the training program. There is a discrepancy between the actual testing that takes place at present and the requirements of competence assessment.
3. *France.* The most critical comments are that ETED analysts have no ability and no credibility in assessing which people are competent. Also the performance of people is assessed in simulated professional contexts that give no guarantee that the same person will be competent in an actual professional context as well. The way that the assessment of the bilan is being conducted is contrary to the intended idea behind it. The focus seems to be more on VET diplomas than on informally acquired competencies. The use of participatory instruments with a development focus is being neglected too much. Furthermore, the bilan is also accessible to those other than the individual who did the bilan. The quality of the assessors and the time for assessments is a problem too.
4. *Netherlands.* The main critiques are the following: Knowledge, skills and attitudes are divided in the competence-based qualification structure. Competencies are being emphasized so strongly that the knowledge component in programs gets too little

attention. General subjects are difficult to integrate according to the teachers of those subjects. Furthermore there are problems with the tendency of a lowering of the mastery of basic skills, costs of assessments, the difficulty of using the concept in lower levels of VET, the decreasing amount of information and instruction teachers provide, adjusting the school organization, and varying learning trajectories that make educational programming more difficult.

The criticisms of the means of the implementation of competence include three major arguments that can be divided into three critical levels. The first level comprises practical, partly institutional, problems in realising the approaches towards competence in all four countries. A second level of criticism is reflected in the assessment of competence in VET which is a problem faced in all countries. A last level is the definition of competence itself. The way competence is defined is relevant for its use, in so far as this level is strongly related to the two aforementioned levels.

Conclusions

First of all it can be concluded that from a historical perspective the concept of competence is not new. However, the institutionalized use of the concept in the development of vocational education is new. In the states studied, the use of the concept of competence is rather different. Secondly, the critical remarks brought forward by Biemans et al (op cit) are confirmed in this critical analysis of the use of the competence concept. These critical remarks were: 1. there are many conceptual definitions of competence and competency; 2. there is an over-reliance on standardisation of competencies, whereas the power of competence-based education lies in its context-embeddedness; 3. it is hard to integrate learning in schools with learning in the

workplace, the concept of competence does not solve this automatically; 4. specifying competencies to be acquired by students does not automatically result in the design of effective learning activities; 5. assessment of competencies, especially in work situations, is a labour-intensive and time-consuming exercise; 6. the extent to which the role of teacher (and student) changes can easily be overlooked when competence-based education is implemented; 7. in developing competence-based education, it is essential that structural attention is paid to the competence development of teachers and school managers.

Next to that other problems are identified regarding the relationship between competence and performance, competence and knowledge, competence and the curriculum, competence and instruction, and competence and organization.

1. Competence and performance
    - The link between competence and performance is not direct.
2. Competence and knowledge
    - Competencies are being emphasized so strongly that the knowledge component in programs tends to get too little attention.
    - General subjects are difficult to integrate according to the teachers of those subjects.
3. Competence and the curriculum
    - Competence fields can be too superficial and should be related to the analysis of performance requirements.
    - The logical order of knowledge domains may get lost.
    - Knowledge, skills and attitudes are divided again in the competence-based qualification structure.
    - The emphasis is more on the formal than on the informal acquisition of competence.

4. Competence and instruction

- Increasingly there is a lack of information and instruction teachers provide.
- There is a fear that the mastery of basic skills decreases.

5. Competence and organization

- Adjusting of the school organization is necessary but not realized everywhere.
- Competence development of teachers is needed as a model for students.
- Using the concept of competence in lower levels of VET is more difficult.
- Demand-led education and diversification of learning trajectories at the individual level make programming of competence development difficult.

6. Competence and assessment

- The emphasis on competence assessment is unbalanced.
- Competence assessment frustrates learning and development more than it supports it.
- It is difficult to determine whether a competency is achieved or not: the development of competence takes a long time; some competencies are only applied after graduation, which makes it difficult to assess them during the training program.
- Competence is formulated in terms that are too general, which means that they do not have any discriminative power in assessments.
- The performance of people is often assessed in simulated professional contexts that give no guarantee that the same person will be competent in an actual professional context as well.
- Competence profile analysts do not always have sufficient ability and credibility in assessing which persons are competent;

It is illustrated that although, in all countries, competence is demanded and is more or less integrated in the systems, the measurements taken by governments, economy and institutions face strong critiques. These critiques may have a beneficial effect for other countries in that they can learn from the experiences.

Regarding the methods countries are using for the implementation of competence there are disagreements about the benefits. Delamare Le Deist and Winterton (2005, 40) argue that multi-dimensional frameworks to competence are becoming widespread because these frameworks are able to exploit the synergy between formal education and experiential learning to better develop professional competence. Straka (2004) on the other hand sees the multi-dimensional holistic approach less positively. He comments that the holistic approach may be counterproductive to the objectives of the European Commission (transparency and mobility).

Our own point of view in this discussion is rooted in our definition of competence, which is the capability to perform; to use knowledge, skills and attitudes that are integrated in the professional repertoire of the individual. Measures regarding the development of vocational education and training should be based on continuous competence development processes involving pupils, students and graduates from the perspective of life long learning. This should not be done in an outdated behaviouristic way, and there is also no need to do this. A holistic competence approach is most suitable. We see in the holistic approach a new direction next to the three approaches described at the beginning of this contribution. The holistic approach allows a limited set of core competencies and also knowledge components. Additionally it can have a guiding function for the development of a curriculum.

Furthermore, in enhancing cooperation in the development of vocational training, countries need diverse measures and initiatives, since institutionalized vocational education and training practices vary considerably, and only a holistic approach can accommodate these differences.

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Box 1 Main critiques on the use of the concept of competence in VET development in selected EU member states

UK	Germany	France	Netherlands
• NVQs are not used sufficiently • Learning does matter - it affects the nature of competence that individuals build up • By separating assessment, candidates concentrate on reviewing their existing competence instead of building up new competence • NVQs do not support qualification development • Competence reduced to successfully demonstrating skills and abilities • Competence cannot be captured through generic descriptions • By failing to characterize key, generative components of competence, units can fail to discriminate between individuals whose capacity to perform in a wide range of settings within an occupational area is strongly contrasting • Link between competence and performance is loose: various competencies can be responsible for effective performance; by assessing performance one cannot exclusively attribute that to	• Competence-based VET development prefers learning areas over the classical subjects: the order for knowledge provided by subjects may get lost • Educational meaning of vocational schools will be neglected if the concentration is too narrowly on professional activities • Concept of learning areas was implemented by the KMK without consulting researchers • No adequate definition of action competence and learning area by the KMK • No explanation how it is possible to recognize when the goal of competence is achieved • Problems in the diagnosis of educational achievement and the development of educational standards • Teachers at vocational schools have problems in identifying the main ideas of the learning area approach, they had neither enough time to prepare the concept, nor were they given support to implement it • Some of the objectives are only to be seen after the vocational training, meaning a lack of a real	• No ability and no credibility of ETED analysts in assessing which persons are competent • Performance assessed in simulated professional contexts: no guarantee that the same person will be competent in an actual professional context as well • Portfolios in the bilan often just refer to school and VET certificates, leaving out the acquisition of informal competencies • For assessment mainly tests are used instead of participative instruments, which would have a stronger development focus • Administrations, employers, managers get insight into the results of the bilan of their employees • If people from the centre de bilan do not know enough about the specific occupation of the candidate, they are unable to value needed competencies • Mostly centres do not have sufficient time to study thoroughly the biography of the person asking for the bilan • Candidates of the bilan disagree with the portfolio because they misunderstand its content	• Knowledge, skills and attitudes divided in the competence-based qualification structure • Role of knowledge is undervalued by competency-movement • Difficulties in integration of the place of general subjects like languages and science • Fear that the mastery in basic skills will decrease • Assessment more expensive • Concept cannot easily be used at lower levels of vocational training • Because of large emphasis on coaching, students complain about lack of information they receive from teachers • Competence-based education requires new concepts of school organization, many regulations are still structuring the educational programs • Because of internal differentiation in educational process, demand-led education programs and self-responsible and self-managed learning, steps of students through programs are increasingly varying, which leads to problems

certain competencies • Generic use of competence does not guarantee that competence in one context can be readily transferable to another	assessment during initial VET • Examinations in VET for which the social partners are responsible are focused on knowledge and skills, not on competence		in designing trajectories for competence development • Lack of good examples of competence-based VET • Strong band-wagon and piggy-backing behaviour in VET regarding competence