



Evaluation of competence-based teaching in higher education: From theory to practice



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ARTICLE INFO

Article history:

Received 14 May 2014

Received in revised form 12 February 2015

Accepted 1 March 2015

Available online 9 March 2015

Keywords:

Quality management

Participatory evaluation

Higher education

Competence-based teaching

Implementation

ABSTRACT

Competence-based teaching in higher education institutions and its evaluation have become a prevalent topic especially in the European Union. However, evaluation instruments are often limited, for example to single student competencies or specific elements of the teaching process. The present paper provides a more comprehensive evaluation concept that contributes to sustainable improvement of competence-based teaching in higher education institutions. The evaluation concept considers competence research developments as well as the participatory evaluation approach. The evaluation concept consists of three stages. The first stage evaluates whether the competencies students are supposed to acquire within the curriculum (ideal situation) are well defined. The second stage evaluates the teaching process and the competencies students have actually acquired (real situation). The third stage evaluates concrete aspects of the teaching process. Additionally, an implementation strategy is introduced to support the transfer from the theoretical evaluation concept to practice. The evaluation concept and its implementation strategy are designed for internal evaluations in higher education and primarily address higher education institutions that have already developed and conducted a competence-based curriculum.

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1. Relevance

In the last years or even decades there has been a shift from teacher-centered education to learner-centered education (Reynolds & Miller, 2013). There has also been a shift from content-centered curricula to competence-centered curricula (Wesselink, Dekker-Groen, Biemans, & Mulder, 2010). Competence-based teaching is a highly relevant topic in educational research and practice worldwide (see, e.g., the Organisation for Economic Co-operation and Development (OECD) studies PISA, PIACC, & AHELO; Organisation for Economic Co-operation & Development, 2014). Especially in the European Union, competence-based teaching in higher education has become a highly relevant goal. The ministers

responsible for higher education in the countries of the European Union created the European Higher Education Area to ensure comparable and compatible qualifications of graduates within the European Union ("Bologna-Process", European Commission, 2014). This orientation toward competence-based teaching in higher education consequently requires new evaluation concepts that overcome three limitations of existing evaluation approaches, which are described in the following.

First, existing instruments for the evaluation of competencies often focus on single student competencies (e.g. by course evaluation). In competence-based higher education, concepts and methods for the evaluation of all student competencies of a concrete curriculum at a concrete university are needed. Furthermore, if competencies are put center stage, quality criteria derived from competence research should be considered in defining the competencies students should acquire within the curriculum. Second, existing evaluation approaches often focus on specific aspects of the teaching process (i.e. the curriculum, single courses, or the context). Competence-based higher education requires a more comprehensive view of competence-based teaching in higher education that leads to systematic evaluation. Third, most evaluations in the context of teaching in higher education focus on

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status assessments without considering the needs of the stakeholders. However, a participatory evaluation approach (Cousins & Chouinard, 2012; Hansen, Alkin, & Wallace, 2013) that includes the relevant stakeholders of higher education institutions in the evaluation process should be applied to the evaluation of competence-based teaching in higher education.

The present paper introduces an evaluation concept for competence-based higher education that (1) incorporates all student competencies and that is based (2) on a comprehensive view of competence-based teaching as well as (3) on the participatory evaluation approach.

The evaluation concept at hand primarily addresses universities which have already developed and implemented a competence-based curriculum and which now aim to gather evaluation expertise to evaluate and optimize their competence-based teaching. The curriculum itself and the selected competencies need to be based on the best information and evidence in the field. Hence, a thorough curriculum development is an important prerequisite for implementing the evaluation concept.

Because implementing participatory evaluation involves many challenges (Cousins & Chouinard, 2012), we additionally provide an implementation strategy derived from current implementation research. However, universities which have not yet implemented a competence-based curriculum but have started developing and implementing such a curriculum can also gain relevant information.

The evaluation concept is designed for internal evaluation at universities carried out by internal evaluators or quality managers who are not necessarily experts in competence research or scientific evaluation. Therefore, the model is rather basic and can be used as a foundation for more complex evaluation models.

The theoretical foundations for the evaluation concept are current developments in competence research and the participatory evaluation approach (see Cousins & Chouinard, 2012, for further information on participatory evaluation). Evaluation research and competence research have not been well related so far. Therefore, we provide an introduction to quality criteria derived from competence research and briefly explain a theoretical competence model as well as a competence-based teaching model before presenting the evaluation concept.

2. Competencies in higher education from an evaluation perspective

In educational contexts, the theoretical concept of competence has its origins in the field of linguistic development and socialization (e.g. Chomsky, 1986; Habermas, 1981), education (e.g. Roth, 1971) and psychology (McClelland, 1973; we refer the interested reader to Klieme, Hartig, & Rauch, 2008; for an overview of concepts of competence see also Weinert, 1999). Hence, competence research is a heterogeneous field in which many different definitions, models, and measurement approaches are discussed. In the following we introduce the field of competence research from an evaluation perspective. This means that we do

not go into detail of complex definitions, models, and measurements of competence. On the contrary, we narrow the scope of the paper to quality criteria evaluators need in the context of participatory evaluation of competence-based teaching in higher education institutions.

2.1. Definition of competence

In a very broad sense, competencies can be defined as “context-specific dispositions which are acquired and which are needed to cope successfully with domain-specific situations and tasks” (Blömeke, Zlatkin-Troitschanskaia, Kuhn, & Fege, 2013, p. 3). In a very specific sense, competencies can be formulated as concrete learning outcomes (European Commission, 2014; Kennedy, Hyland, & Ryan, 2009). Hence, the degrees of abstraction in the definitions of competence vary from very broad to very specific and there is no consensus of an appropriate degree of abstraction.

Concerning the definition of competence for evaluation purposes, the evaluation standards and specifically the utility standard provide a framework for deciding on the degree of abstraction (Joint Committee on Standards for Educational Evaluation, 2011). The utility standard means that evaluations’ results should meet the information needs of the intended users. Intended users in the context of competence-based teaching are specific to the particular higher education institutions but typically the following are identified: vice rectorate for study affairs, senate, curricular commission, quality management department, teachers, instructors, and students. Taking the utility standard into consideration for these intended users means that competencies should not be formulated on a very high degree of abstraction because the results might not lead to concrete actions for improvement. However, competencies should not be formulated on a very low degree of abstraction either as this can lead to a high amount of detailed results likely to overwhelm intended users and also violate the feasibility standards of evaluation. Hence, the first quality criterion in defining competencies is that competencies should be formulated on a medium degree of abstraction (see also Mulder, Gulikers, Biemans, & Wesselink, 2009). For the readers’ understanding, Table 1 provides an example of different degrees of abstraction in the context of tertiary teacher education.

A further quality criterion in the definition of competence is the specification of the components which together form competence. Such components could be knowledge (e.g. declarative, procedural, or conditional knowledge), skills, strategies, attitudes, etc. Components that should be included vary between different definitions of competence (Weinert, 1999). However, many definitions imply at least two components: knowledge and skill (Koeppen, Hartig, Klieme, & Leutner, 2008; Organisation for Economic Co-operation & Development, 2014).

Hence, a competence model for higher education that is as simple as possible should at least contain the distinction between knowledge and skills. This also has a practical implication for the evaluation use. Since the development of higher education toward competence-orientation in teaching, skills (such as practical skills

Table 1
Degree of abstraction in defining competencies.

Degree of abstraction	Example
High (not context- and domain-specific)	Ability to explain complex information in an understandable way.
Medium (context- and domain-specific)	Ability to explain mathematical contents in an understandable way which is appropriate for the students’ age.
Low (context- and domain-specific learning outcomes)	Ability to explain differential equations and their use in an understandable way to grade 12 students.

Note: Degrees of abstraction in defining competencies using the example of tertiary teacher education.

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