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Assessing the relevance of higher education courses

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Abstract

The establishment of the European Higher Education Area has involved specifying lists of professional competencies that programs are expected to develop, and with this the need for procedures to measure how every course within a higher education program is aligned with the program's competencies. We propose an instrument for characterizing this alignment, a process that we call assessing the relevance of a course. Using information from the course syllabus (objectives, contents and assessment scheme), our instrument produces indicators for characterizing the syllabus in terms of a competence list and for assessing its coherence. Because assessment involves quality, the results obtained can also be used to revise and improve the course syllabus. We illustrate this process with an example of a methods course from a mathematics teacher education program at a Spanish university.

Keywords: Assessment; Competency-based education; Higher education; Quality; Alignment; Relevance; Teacher education

1. Introduction

There is currently a move toward standards in higher education (Jackson, 1998; Randall, 2002). This move emphasizes a requirement for accountability (Wiley, 2005) and a corresponding quality assurance effort (El–Khawas, DePietro–Jurand, & Holm–Nielsen, 1998; Segers & Dochy, 1996). In the United States, for example, the International Board of Standards for Training, Performance and Instruction (ibstpi) has developed competencies for professional practitioners in a wide range of areas (Klein & Richey, 2005; Spector et al., 2006). In Europe, the implementation of the European Higher Education Area involves establishing a set of competencies (both generic and specific) for each professional profile, including that of teachers (González & Wagenaar, 2003a). The quality assurance of programs is expected to include "careful attention to curriculum and programme design and content" (ENQA, 2005, p. 16).

In this context, instructional design oriented to the development of competencies has become an institutional concern in higher education, and research in this area has developed models adapted to this paradigm (Fallows & Steven, 2000a; Pimienta & Meléndez, 2005; Voorhees, 2001). However, different alignment problems arise (Cowan, George, & Pinheiro-Torres, 2004), in particular, the issue of assessing the compliance of the individual courses in a program with the competencies assigned to the program (Toohey, 1999). Given that course design is one of the determining components in the quality assurance perspective (Henderson-Smart, Winning, Gerzina, King, & Hyde, 2006), the results of this assessment are to be used to improve program quality (Biggs, 1999). The focus of this paper is to propose a method for analyzing some aspects of a course syllabus (objectives, contents and assessment) in terms of the competencies to which it is expected to contribute. We call this process assessing the relevance of a course. We describe an instrument to perform this relevance assessment and provide an example of the

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process, taking as a model a mathematics teacher education course.

We start the paper justifying the need for instruments to assess the alignment of a course with a list of competencies and introduce the key notions involved. On the basis of these notions, we introduce the ideas of relevance dimensions and indicators to describe the detailed procedures involved in the relevance assessment instrument we propose. Finally, we put in practice those procedures to assess the relevance of a prospective secondary mathematics teachers' methods course and suggest how the results can be interpreted from the perspective of the syllabus design.

2. Alignment of syllabi with competencies: characterizing relevance

Around the world, teachers are being required to document to what extent their courses support the development of generic skills (Bath, Smith, Stein, & Swann, 2004), and accreditation standards and agencies have been established (ANECA (n.d.); National Council for Accreditation of Teacher Education, 2002; Randall, 2002; Volkwein, Lattuca, Harper, & Domingo, 2007). In Europe, following the Bologna Declaration (Bologna Declaration, 1999), several procedures for quality assurance were established in European higher education institutions (Bornmann, Mittag, & Daniel, 2006; Jeliazkova & Westerheijden, 2002). However, there is still confusion and doubt about how to implement them (Haug, 2003). The Tuning project has identified points of reference for generic and subject-specific competencies of first and second cycle graduates in Europe (González & Wagenaar, 2003a). In this project, quality "was considered as a fundamental element for trust and relevance in terms of employability and citizenship and of preparation of graduates for crucial issues to be able to participate, work and live in a permanently changing society." (González & Wagenaar, 2003b, p. 242). The Tuning project has developed a model for designing, planning and implementing curricula offered within an institution (Deane & Watters, 2004; Fallows & Steven, 2000b). The institution must define academic and professional profiles; describe the objectives of the program as well as the learning outcomes (in terms of knowledge, understanding and skills); identify the generic and subject-related competencies; distribute them into course units or modules; decide the approaches to teaching and learning, as well as the methods of assessment; translate them into educational units and activities; and design a program of quality assurance. In this study, we will assume that the curriculum design of a program structures its courses in such a way that fulfilling the different courses' competencies leads to the achievement of the corresponding program's competencies. In particular, the program design might assign a subset of the program's competencies to each course.

Competencies describe learning outcomes: what a learner knows or is able to demonstrate after the completion of a learning process. The notion of competence involves a combination of attributes—knowledge, capabilities, skills and attitudes—that enable an individual or group to perform a role or set of tasks (Preston & Walker, 1993, p. 118). This idea has been widely reformulated (see, for example, Richey, 2002) and different organisms and projects have described concrete lists of competencies [Tuning (González & Wagenaar, 2003a), DeSeCo (OECD, 2005), ibstpi (Klein & Richey, 2005; Spector et al., 2006), TenCompetence (Kew, 2006)]. Determining whether a course design is aligned with a list of competencies involves a broad variety of meanings, ranging from the correspondence of the course level and the students' previous knowledge to identifying incoherencies or gaps in the course syllabus (Webb, 1997; Glatthorn, 1999). Before checking whether the competencies are developed in practice once the course syllabus is implemented, one should assess from the curriculum design perspective to which extent the syllabus can potentially contribute to the development of these competencies. We will focus on determining the degree to which the course syllabus agrees with the development of a given list of competencies and promotes them coherently. We will refer to this issue as the assessment of the relevance of the course.

We use the course objectives as the lens for establishing the link between the course syllabus and the competencies. The notion of objective reflects the general course outcomes, is used to communicate the teacher's intentions to students and colleagues, and serves as a framework and guide for design of the syllabus as a whole. Courses objectives are considered, in the instructional design processes, as the means of evaluating both the instruction and the learning that has occurred (Gagné, Briggs, & Wager, 1992). Other elements of the syllabus also form part of the process, since determining the coherence of the objectives, content and assessment of the course is also important from the quality perspective (Biggs, 2003).

The relevance of a course is a multidimensional notion. Based on the argument above, we take three dimensions into account. The first two involve the analysis of how and to what extent both the objectives and the syllabus as whole contribute to the development of the competencies. The third dimension explores the coherence with which the syllabus seeks to develop those competencies. Given its multidimensional character, the relevance of a course cannot be captured in a single measure on a given scale. Instead, we consider several measures, the relevance indicators, which are obtained from the different components of the curriculum. Although most of these indicators have a numerical character and are to be measured with ordered scales, they should not be used individually to evaluate specific aspects of the relevance of a syllabus or to compare different syllabi. Their correct interpretation in terms of relevance must be made through the three