Chapter 12
A Model for Competence E-Assessment and Feedback in Higher Education

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ABSTRACT

This chapter presents a non-conventional formative initiative which considers the e-assessment and feedback of project management competences in higher education. The proposed model is built upon a virtual learning environment (VLE) that offers opportunities for students to experience situations that are similar to what they will encounter in the working world. More specifically, the simulation environment is used to recreate the reality of an organization dedicated to direct, manage, and organize projects. The designed VLE enables the e-assessment and feedback of individual project management competences by considering a set of performance indicators for each participant in the simulation. That is, the performance and contribution of each student is measured through different pieces of evidence that are pertinent to each assessed competence. Additionally, the analysis and process of the information gathered from the VLE allows to deliver varied and detailed information to the learners with the intention of modifying their thinking or behavior and improving their learning process.

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INTRODUCTION

In recent years, ensuring that there is a quality learning environment in the educational systems has become a priority objective on the European Higher Education Area (European Commission/EACEA/Eurydice, 2014; European Commission/EACEA/Eurydice, 2015). In this scenario, such quality is associated with the student’s ability to regulate the construction of his or her own knowledge from a competency approach. In general terms, competency-based learning consists of knowing how to do something effectively in a situation that is determined by the context in which it is framed (Villa & Poblete, 2007). The key is that these competences enable the task of learning, promoting knowledge, know-how, and knowing how to be, so that higher education plays a fundamental role in the effective preparation to learn throughout life. This practical conception of competence presupposes in the student the ability to self-regulate and control his or her own knowledge (metacognitive skills) built on the basis of a set of theoretical knowledge, procedural knowledge and attitudinal knowledge (Navaridas-Nalda & Jiménez-Trens, 2017). According to this approach, self-regulated learning is an active and mediated process which is based on critical reflection, whereby students set valuable goals for their learning, control and direct their thinking, and guide their motivation and behavior to achieve academic results (Schunk & Zimmerman, 1998; Zimmerman, 2001; Pintrich & Zusho, 2002).

From the teacher’s point of view, helping students to regulate their own learning for the acquisition and development of competencies requires generating feedback on various areas or dimensions related to the process of knowledge construction (cognitive, motivational, attitudinal, contextual), so that it can be used by these students to improve and transfer their learning in diverse contexts and situations (Sadler, 1998; Nicol & Macfarlane-Drick, 2006).

In the specific case of teaching in higher education, this idea involves redefining the concept and value of assessment in the teaching and learning process. The new culture of higher education learning emphasizes the importance of integrating evaluation into the same training process (Morales, 2012). Thus, the evaluation must now be considered as a learning situation in its own sense (assessment for learning or formative assessment), besides fulfilling its primary function of verifying what students know and can do at a specific point in the learning process (assessment of learning or summative assessment). From this conception, assessment has a key formative purpose (Black & Wiliam, 1998; Sadler, 1998; Bennett, 2011) and the design of the learning process in the university classroom must be revised. In this sense, it should be remembered that the way students approach their learning (what and how they study) is strongly influenced by the way in which they are assessed (Baeten, Dochy, Struyven, Parmentier & Vanderbruggen, 2015). Formative assessment is, without a doubt, a powerful tool to positively impact on students’ learning and achievements.

A key feature in formative assessment systems is the role that students play in feedback processes (proactive students) (Nicol & Macfarlane-Drick, 2006). Otherwise, if assessment is the sole responsibility of the teacher (reactive students), it will be very difficult to see how students can develop some self-regulation skills that are necessary for competency-based learning (Boud, 2000). Therefore, from this formative perspective, students should always be actively involved in the assessment, regulation and control of their own performance or competency performance, taking as reference the desired goals and strategies adopted to achieve these goals.

Along the same line of thought, Black and William (1998) consider formative evaluation as a systematic plan of activities that are carried out by teachers, and by their students in the evaluation of themselves, and provide relevant information to be used as feedback to improve and transfer learning to different contexts.