Prompt Feedback by an assessment instrument (EvalCOMIX) in an Engineering Degree

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Abstract

The adapting process to the European Higher Education Area (EHEA) gives a different value to the evaluation process, since it has not only be a certification of that students have learned, but the overall process in which the students can be aware of how and what is learned. This implies that the assessment should be formative as well as summative, for instance, it must be focused to promote or facilitate learning in addition to a normal scoring process. A fast and detailed feedback of learning process is required and allows students to continuous improvement. The teacher feedback is not always required; but it is recommended that the students themselves or their partners also can offer this feedback. Thus, feedback can be very useful both to motivate and involve students in their own learning process and to accounting for non-lecture time of the students; on the other hand, this may reduce the teaching load especially for large groups. In order to assure that students participation in feedback helps and influences the improving learning process is essential to define with clarity the criteria and the objectives of assessment tasks; furthermore they should be used easily and automatically in order to ensure the immediacy of the feedback. One of the main objectives of The GRAPA innovation group at the Universitat Politècnica de Catalunya is provide to the teachers of strategies and assessment tools to facilitate the adaptation to the EHEA. EvalCOMIX is one of

these useful tools which have been developed to facilitate feedback in assessment process under compatible structure to the virtual campus (Moodle).

In this work is reported the assessment tools created and used through the EvalCOMIX in the subject of Engineering Projects of Engineering in Industrial Organisation degree (part-time attendance course) during the course of 2011-2012.

Extended summary

The adapting process to the European Higher Education Area (EHEA) at the University Politècnica de Catalunya (Barcelona Tech, Spain) has been made necessary the dissemination of the educational innovation being undertaken in this process to the university community in order to extend and promote innovation among all degrees and university centres. Aimed with this purpose have been created groups clustered in the project RIMA (Recerca i Innovació en Metodologies de l'Aprenentatge, http://www.upc.edu/rima/) which pretend to involve teachers into the new methodologies. GRAPA (http://www.upc.edu/rima/grups/grapa) is one of these groups which its main focused on the evaluation of learning process.

The most important change involved in the process of convergence towards the EHEA is undoubtedly that focus of the process is no longer teaching but learning (Biggs 2003). It means to move the whole teaching-learning process from the work of teachers to be focused on the student activities. In the design of these activities should be considered for the teacher that assessment must become a strategy to improve and enhance learning process. Assessment is not an 'add-on' to the curriculum structure of a program. The assessment of student learning is certainly at the focus of their learning process since the assessment methodology determines the ability of progress of the student during this process and conditioned the curriculum [Boud 2010]. In order to ensure that assessment support learning process, teachers must take into account that this process involves a series of activities related to formative assessment in addition to the summative [Nicol 2006; Canto 2011,]. This implies that the assessment must be consequent with the objectives and activities to be performed, and oriented for learning [Carless 2007]. In addition students must have a feedback that allows being aware about the learning process that leads to the continuous improving instead of classical assessment in which feedback is often ineffective, principally because it comes too late.
Increasing the participation of students in their learning process through the assessment is a form of motivation and involvement of students. In addition allows developing their autonomy and capacity to manage their own learning. The term assessment takes a wide sense as it allows aid in the learning process and is not only synonymous of scoring.

Considering this wider concept of assessment is necessary to dispose of different assessment tools that let of assessment as peer- or self-evaluation since they allow an immediately feedback, which represent a significant improvement especially in large groups. EvalCOMIX [Rodriguez 2011] is an instrument that allows creating assessment tools under the virtual campus (Moodle) structure. Thus, once the activity or task is delivered by the students and selecting the appropriate option will access the instrument on self-assessment or assessment

performed by their peers. In addition, each kind of assessment has an associated weight and its impact on the total activity score, in that way the assessment process can be viewed by teacher and students and then feedback is automatically.

This manuscript presents the application of this assessment tool in the subject of Engineering Projects of Engineering in Industrial Organisation degree (part-time attendance course) that is taught in School of Industrial and Aeronautical Engineering of Terrassa (ETSEIAT, http://www.upc.edu/aprendre/centres-docents/etseiat) to approximately 80 students. For several years this subject has been developed with Project Based Learning (PBL) methodology in which a project task is commissioned during the course and delivery schedule is defined in order to assess (summative and formative) the evolution of the project over the different revisions of the course [Lopez Pastor 2011]. The deliveries are structured among others formats of written reports, oral presentations, poster or video in addition to questions about the operation or group cohesion. The students participation in assessment process has been involved in last years, but feedback to students has been not immediately due to a time required by the teacher to collect all reports and to prepare a summary inform for each group. The use of EvalCOMIX instrument ensures immediate feedback, thus facilitating the incorporation of improvements during the learning process. Some of the tools developed in EvalCOMIX are presented and a comparison of the teachers and students assessment results, explaining the main deviations obtained. Finally, the results of the satisfaction survey by students are also reported, analysing in detail the incorporation of the assessment tool in the virtual campus (Moodle) of the University.

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