Web based education and assessment in the Bologna process

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ABSTRACT

The creation of the European higher education area by means of the Bologna process implies a series of changes in teaching and evaluation methodologies. These include emphasizing the participation of the student and the incorporation of new technologies such as web based education. Hence, a full restructuring must be carried out for most subjects, which must take into account new tradeoffs between the contents and the aims of the students. Moreover, teaching strategies and practices must be updated accordingly. Here we discuss a case study in full, which is based on our own experience. In order to adapt the Automata Theory subject to the new structure of Computer Science degrees, a novel teaching methodology has been developed that belongs to the ECTS credit system implantation experience sponsored by the Computer Engineering School of the University of Málaga. This methodology emphasizes assessable classroom activities, along with different kinds of projects to be completed during the course. A wide range of optional assignments is provided in order to cover the variability of students' interests. Furthermore, the performance of the students is evaluated through the course with the help of web based assessment tools, so that the student is always aware of his/her progresses. These tools are centralized in a virtual campus, which also serves as a framework for additional activities such as discussion forums and collaborative tasks. These adaptations are supported by a careful design of the way that the theoretical concepts are introduced. In particular, the notation, the presentation style and the relative emphasis on the different sections of the syllabus are guided by students' capabilities and the overall goals of the degree. These modifications should result in an improvement of the motivation and the integration of the contents of the subject with the Computer Science body of knowledge that the School tries to convey.

Keywords
Web based education, web based assessment, Bologna process, virtual teaching.