Available online at www.sciencedirect.com

ScienceDirect

Procedia - Social and Behavioral Sciences 237 (2017) 606 – 612

Procedia
Social and Behavioral Sciences

7th International Conference on Intercultural Education "Education, Health and ICT for a Transcultural World", EDUHEM 2016, 15-17 June 2016, Almeria, Spain

ICT-Based Active Methodologies

Vanesa-María Gámiz-Sánchez*

University of Granada, Faculty of Educational Science, Campus Cartuja s/n, Granada 18071, Spain

Abstract

This paper presents the research experience performed at the Faculty of Educational Sciences of the University of Granada on the use of pedagogical tools that promote the student's active learning, learning strategies supported by the methodological change in teaching and learning promoted by the process of convergence with the European Higher Education Area (EHEA).
Specifically, we present innovative teaching experiences developed within the framework of several research and innovation projects funded by the Ministry of Economy and Competitiveness and the University of Granada. These projects used ICT-based tools to promote students' active learning and awareness in their learning processes. The tools include eRubrics, concept maps, project-based learning, ePortfolios and virtual learning environments.

Peer-review under responsibility of the organizing committee of EDUHEM 2016.
Keywords: Active learning; ICT; Higher Education; Virtual learning environments; Teaching methodologies

1. Introduction. Active learning methodologies and the requirements of the European Higher Education Area

In recent years, the Spanish university has undergone a process of convergence with the EHEA. This process has served to redesign traditional conceptions of several aspects of education in many areas of academia, among them, university teaching. The challenge is to respond to contemporary social realities by providing quality training in which the support of Information and Communication Technologies (ICTs) can become essential.

In the convergence process, European countries have shown a desire to join efforts in establishing a common framework. This area (EHEA) continues not only to homogenize structures but to extend change to its approaches,

* Corresponding author. Tel.: +34-958-241-959; fax: +34-958-248-965.
E-mail address: vanesa@ugr.es

Peer-review under responsibility of the organizing committee of EDUHEM 2016.
doi:10.1016/j.sbspro.2017.02.018

introducing a reconceptualization of university teaching based on profound reflection on contemporary society's needs and adaptation of the education system to increasingly diverse and competitive realities.

One objective of European convergence is to optimize teaching planning processes to facilitate the visibility and comparability of education programs (Zabalza, 2006). Ultimately, one of its political goals is to strengthen comparability of education systems and exchange of professionals among countries.

This comparison cannot be reduced to simple legal frameworks that make the structure and duration of university studies, names and granting of degrees and bureaucratic procedures more similar. The EHEA must engage in more qualitative revision to optimize education processes, update its approaches, adjust them better to the knowledge society in which we live, and in essence provide the highest-quality education possible to address these needs.

Parameters have been discussed to strengthen the foundations of this movement toward university renovation and change. While these parameters include elements such as mobility, competitiveness and diversity, and the areas needed to implement these elements, we must promote the pursuit of quality and excellence in all education processes. Profound methodological change has also been highlighted and has come to focus on constructing new roles for teacher and student. The student's role is characterized by continuous long-life learning and development of greater autonomy in his/her learning (Kramarsky & Michalsky, 2009).

Putting this conception of the student-focused learning process into practice must include techniques designed to replace or complement traditional methodologies such as lecturing with learning experiences that grant students greater responsibility. This more active role could be reflected, for example, in research into materials and bibliography beyond class notes, or in providing/assigning open problems and tasks that require critical or reflective thinking (Pastor, 2005). At this point, multiple ICT-based tools are available to support the student's effort to construct his/her own learning.

The new approach also changes the teacher's role. In this process, teachers must pay more attention to the students' learning process and to the very important role of mentoring. ICT can serve as a significant communication tool both to establish a new dimension in student-teacher relationships and simultaneously to facilitate the teacher's monitoring and guidance of student learning.

Following this line of methodological change, Salinas (1997) argues that the training modalities supported in ICT lead to new conceptions of the teaching-learning process that stress the student's active implication in the learning process, attention to emotional and intellectual skills at different levels, and training of teenagers to assume responsibilities in a world that is changing quickly and constantly. Students' flexibility to enter a labor market that will demand lifelong training and the competencies required for this continuous learning process are also paramount. The new technologies have thus become an irreplaceable tool of undeniable value and efficacy in the use of information for educational purposes (Cabero, 2007). Because information sources are increasingly distributed and accessible to all, it now seems difficult to imagine a university educational process that does not include the use of new technologies. New technologies must be assigned as content and resources that facilitate the interaction and construction of learning processes.

2. ICT-based active learning methodologies

The change from teacher-centered teaching to student-centered learning proposed by the EHEA convergence process has meant methodological renovation and change in the current university educational model. The teaching-learning process understood from this perspective seeks a student profile characterized by the following components: active learner, autonomous, strategic, thoughtful, cooperative, responsible (March, 2006). To achieve this goal, teachers use methods oriented to students' participation and implication in their own learning, thereby rethinking key concepts in our universities.

While we cannot establish definitively that some methodologies are better than others, we can affirm that higher-order goals such as the development of critical thinking or autonomous learning are achieved more effectively and appropriately through student-centered methods that maximize student participation. These methodologies, in which the learning responsibility depends on the student's activity, implication and commitment, produce deeper, more significant and longer-lasting learning and facilitate knowledge transfer (March, 2006). Further, some studies show that using active learning can improve students' results in certain fields of knowledge (Freeman et al., 2014).