Chapter 15
Assessment of Learning Experiences in the Mathematics Subject Based on an E-Assessment System:
Case – Postgraduate in Senior Management in Online Mode

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ABSTRACT

The objective of the research was to assess the learning experiences of the online modality of the postgraduate student in senior management in the subject of mathematics from the design and implementation of an e-assessment system. The type of study that was used was a methodology with a quantitative approach with an exploratory scope. To obtain the information, the authors used as a tool a questionnaire based on a Likert scale in which the items were measured through a scale with five options from totally disagree to fully agree. The main results were that between 70% and 85% of the respondents mentioned that before starting their graduate studies they had not had any approach with the Moodle platform; between 90% and 94% were totally in agreement to identify that the learning activities favored the development of the competences such as the quantitative analysis, the approach and resolution of situations, as well as the communication of results; and more than 90% of students thought they fully agreed that their commitment to this subject improved.

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INTRODUCTION

The knowledge society demands a transformation in the way of evaluating in education, where the student's participation has been promoted so that it is responsible for its results based on the competencies approach and thus be able to determine its performance during the completion of his training course to be able to apply learning in various situations related to the professional field (Cardona, Jaramillo & Navarro, 2016; Sánchez, Ruíz & Sánchez, 2011; Van Den Berg, Mortelmans, Spooren, Van Petegem, Gijbels & Vanthournout, 2006).

In the same way, this society is characterized by an increasing use of technological means, by the digitalization of data and by the handling of a large amount of information, which has generated the emergence of new demands in the formation of individuals who need to develop skills that allow them to access information, select it and disseminate it from any medium, both nationally and internationally.

In this sense, the construction of key competences in higher education focused on the capacity for analysis and synthesis is required; pose and solve problems; the efficient management of technologies; application of knowledge in situations, as well as working in a collegial manner and in a continuous learning environment, where mathematics is the area of knowledge in which they can be developed (García & Benítez, 2011).

The competency-based approach aims to tune the higher education programs with the needs of the environment, the national productive sector and international insertion, based on a holistic and integral vision of the educational process that implies a change in the roles of the teaching staff and students, as well as promoting social relevance in the training of professionals (Camperos, 2007). As mentioned by Medina, Sánchez and Pérez (2012, p. 134):

Competencies are valuable achievements based on the combination and mastery of new knowledge, styles of practice and attitudes-values considered desirable and formative that achieve a harmonious synthesis to conform what is most appropriate for people and to make decisions that allow them to build their project vital, provide solutions to professional problems and be involved in the improvement of organizations and society in a world in need of a public awareness and the development of a globalizing culture.

Thus, the competences are manifested and demonstrated in the action and allow an integral formation of the student, which also allows a reflection on their own activity because it promotes lifelong learning (López, 2011 & Pintrich, 2004). Therefore, this concept is associated with the development of the individual where an acquisition process is configured, from which the set of capacities is increased in what is called a centrifugal and ascending spiral (Tejada and Ruiz, 2016). That is to say, each person evolves with different levels of development in their competences according to their learning, resources and context in which situations are presented to be solved.

In this sense, the learning environments must be oriented towards: a) an authentic situation as a source of specification of the competences; b) the student as protagonist and agent of the action; c) the promotion of competition, action and resources; d) the community that fosters collaboration with other students and members of the same; and e) the authentic assessment, to provide feedback in training and to have an assessment of its performance (Littlewood, 2011; McGaghie, Issenberg, Petrusa & Scalese, 2010; Ros & Conesa, 2013).