


# Reflections on E-Course Design: A Research Focused on In-Service Primary and Secondary Teachers

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## ABSTRACT

This paper presents a two-year research work with the main goal of analyzing the resources production for online scenarios, as well as enhancing in-service primary and secondary school teachers' competence in this area. After detecting training shortfalls from 1,192 in-service Andalusian teachers using an ad-hoc Likert scale, an online training activity on e-course production was developed, and, upon completion, the participating teachers were surveyed regarding design alternatives (N=86). Results gathered were complemented by conducting a focus group with the course tutors. Initial data allowed to prioritize certain training pathways in the online education extent, such as OER authoring, e-learning standards, repositories, and e-course development. As per the instructional design study, it was emphasized the need for institutional support in course creation initiatives and appropriate designs by combining internal VLE tools and externally produced OER. Finally, feedback, peer evaluation, rubrics, and digital badges were denoted as key elements in e-course designs.

## KEYWORDS

Digital Repositories, E-Learning, Educational Technology, Instructional Design, Moodle, Open Educational Resources, Teachers Digital Competence, Virtual Learning Environments

## INTRODUCTION

A joint report of the Council and the European Commission (2015) on the implementation of the strategic framework for European cooperation in education and training, has identified open and innovative education and training in the digital era as new priority areas for further work until the year 2020. The current state of integration of information and communication technologies (ICT) in teaching practice makes it possible to use virtual training environments to develop online scenarios, as well as to complement classroom teaching processes. Teachers who decide to integrate ICT through the use of such environments should address the task of creating new digital learning materials or adapting and reusing existing ones.

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Creating educational materials in the broader sense is a complex, multi-faceted activity that at times may involve the joint efforts of different professional profiles seeking to obtain end products that can truly allow efficient learning processes to be developed for the academic area which they target. A project for producing digital learning materials should inevitably consider both technological and pedagogical aspects in order to ensure the quality of the creations. The MENTEP project, funded by the European Commission via the Erasmus+ Programme, is a European Policy Experimentation implemented with the collaboration of 16 partners in 13 European countries. The project addresses the use of ICT in the classroom as a mean of innovation, the enhancement of ICT uptake in teaching and learning, the improvement of teachers' digital competence and confidence to use ICT in the classroom, and the strengthening of the professional profile of the teaching profession (Abbiati, Azzolini, Piazzalunga, Rettore, & Schizzerotto, 2018).

In alignment with guidelines of National Institute for Educational Technologies and Teachers' Training in Spain (INTEF), the regional government of Andalusia in Spain has supported and funded this research work. Starting from a general view of the competence in digital resources production of primary and secondary school teachers in Andalusia, the objectives were to detect poor training areas and to reflect on the instructional design approaches for VLE, within the framework of the general goals established by the INTEF and the MENTEP project.

## BACKGROUND

Quality across Europe's education and training systems can be better accomplished through the innovation and digital technologies. Consecution of this challenge depends in large part on teachers' competencies (Uerz, Volman, & Kral, 2018), and on setting high standards for their initial education and the continuing training policies (European Commission, 2016). Communication and information are the essence of teaching and learning actions, which is why the use of ICT in education has a specific weight of its own (Voogt, Knezek, Cox, Knezek, & ten Brummelhuis, 2013). The inclusion of ICT in educational practice has myriad implications and benefits. The current trend towards ubiquitous access to educational information anytime, anywhere, and interaction with peers and experts in specific matters and learning from a variety of sources, positions e-learning and computer based educational systems as a prominent area of study in the field of educational technology (Baez Perez & Clunie Beaufond, 2019).

Recent research emphasizes the use of learner-centric designs for training actions in e-learning scenarios. This approach may help students to develop an attitude of self-improvement, favoring active and self-reliant learning, and indeed enables them to maintain a high level of motivation (Hannafin, Hill, Land, & Lee, 2014). For this to be a reality, teaching professionals should have the necessary guidance and training to design teaching scenarios using ICT in an effective way (Instefjord & Munthe, 2017; INTEF, 2017). Planning, managing and developing educational activities with the support of technology, as well as designing and developing educational materials in digital formats, are aspects that should be addressed in the educational technology area of study (Davies & West, 2014). Designing a training activity implies engaging in an in-depth reflection about the process and the methodology that best suits the specific context. Processes for designing learning materials need be approached bearing in mind two essential topics, namely technical usability and didactic potential, and in this regard, the didactic strengths of the different e-learning authoring tools should be carefully analyzed. Other research works in this area highlight the importance of identifying the profile as well as the role of the instructional designer (York & Ertmer, 2016).

Education is currently embedded in a global movement for openness based on ensuring access to learning and training in both formal and informal educational systems, as well as the removal of barriers that impede the participation of people in training actions (Dalsgaard & Thestrup, 2015). One of the aspects related to openness in the educational field is the adoption of the so-called Open Educational Resources (OER), resources composed of information in any format which can be freely

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