

# The Customized xLearning Environment Model: Meeting the Needs and Expectations of Students

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## ABSTRACT

The evolution in Information Communication Technologies, the changes in the labour market requirements together with the needs and expectation of students who arrive in higher education institutions, are forcing education to adapt. Students do not learn all at the same pace nor have all the same learning style or habits. An ideal learning environment would consider these differences as well as students' background, needs and characteristics. It should take into consideration the latest developments in learning theories, communication, social networks and learning objects available in learning management systems. It should also bridge the gap between education and the labour market by connecting all the actors whether they are students, teachers, experts or potential employers. In this learning environment education is closer to the job market allowing all actors to play in this scenario. In this paper, we propose a model where all the learning and e-learning elements are present and where the student is the focus and the one who decides what should be included in this learning environment in order to create a Customized xLearning Environment.

## KEYWORDS

CxLE, Education, Horizontal Social Networks, Interaction, Knowledge Sharing Tools, PLE, Vertical Social Networks

## INTRODUCTION

Education is witnessing several changes due, on one hand, to the evolution and integration of Information and Communication Technologies (ICT) in the learning environment and, on the other hand, to the alterations and challenges of the labour market. According to Lee (2006), changes in education are both technological and social. As a matter of fact, it is assumed that the educational model based on fixed time, place, curriculum, and pace is not enough in today's society and knowledge-based economy (Gleason, 1986). In this context, the education system must change in order to address the diversity of students' backgrounds and needs. Moreover, educational equity is not about equal access and inputs, but ensuring that a student's educational path, curriculum, instruction, and schedule is developed in order to meet students' needs. Ideally, each student should have access to a personalized learning and this requires a leveraging of modern technologies enabled by smart e-learning systems, developed to track and manage the learning needs of all students, and to provide access to learning content, resources, and learning opportunities which are not all available within the

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traditional classroom. This is the time where the “new” world citizens’ people feel “naked” without the use of technology.

One of the problems in traditional classes is the lack of enough interaction (Gleason, 1986). The interaction between teachers and students is essential for learning in accordance with teaching theories (Motschnig-Pitrik & Holzinger, 2002), resulting in increased adoption of e-learning platforms and less frequently, of web 2.0 services. As Sung says “Educators and technologists alike are keenly interested in how wireless and mobile technology can enhance the way people learn and interact with each other. It is obvious that these m-learning technologies (e-learning using mobile devices and wireless transmission) can potentially provide important opportunities for learning and collaborative interaction” (Sung, Gips, Eagle et al., 2005). However, this interaction should involve other actors, such as external experts and potential employers. How could they be involved in the learning process as well?

Nowadays, learning should also take into consideration that it might take place anywhere. This means that learning environments should be available through mobile devices. Learning will be provided at distance whether it is elearning, mlearning or ulearning, taking into account the physical devices, computation and communication.

One possible solution could be the development of Personal Learning Environments (PLE). This is an approach to integrate different practices and resources (web 2.0 services) to address individual learning needs. This approach is more flexible (when compared with traditional learning environment) and aims to focus on the needs of students (Romero-Frias & Arquero, 2013). However, although PLE includes the integration of a number of web 2.0 technologies and envisages the creation of a personal learning centre, where content is used and reused according to students’ needs and interests, it relies mostly on resources that a learner uses, provide context and illustrates processes (Educause, 2009).

Independently of the training model adopted by each educational institution, it needs to have a component of assessment / examination of knowledge and essays prepared by students whether during the classes or at the final exams. This means that education needs to take into consideration “how [teachers] develop ... programs and activities so that all students learn and participate together” (InclusionBC, n. d.). Ideally, according to our experience, a learning environment should include the participation of external experts that can bring added-value and experience as well as some professional supervision. On one hand, we need to take into consideration that the interests, preferences and abilities of each student will condition his / her choices. On the other hand, students can and should count on the support of teachers and / or external experts (for instance, for final dissertations) that can supervise them during the development of the referred work. Additionally, teachers or external experts can suggest ideas of topics / themes to be developed as final dissertation which might not be known by the students because these might not have been disseminated or its dissemination was not adequate.

So far the model described above does not exist although parts of it are present in different models / structures. Taking this into consideration, we propose a model where all the learning and *x*-learning elements – where *x* could be applied to e-learning, m-learning, and u-learning – are present and where the student is the focus and the one who decides what should be included in this learning environment in order to create a Customized *x*Learning Environment (CxLE). The idea behind this model is to help students to develop their own learning environment using a set of tools and services that cover the functions in their learning process and customise their learning environment. This model also integrates the concepts of social media and knowledge management tools allowing students, teachers and external experts (most of the times these can be future employers) to create and disseminate ideas for educational work in a collaborative interdisciplinary space within and outside the institutional sphere. The solution presented is framed as an inclusive smart information system since it is developed in an adaptative learning environment (e-learning; m-learning; u-learning) for students, in higher education institutions that, due to several reasons (e.g. lack of supervision), feel a little bit lost when they have to choose a certain topic for an essay adapted to his / her profile.

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