Chapter 48
Critical Factors in Defining the Mobile Learning Model: An Innovative Process for Hybrid Learning at the Tecnologico de Monterrey, a Mexican University

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ABSTRACT

Many factors converge when attempting to define the most adequate mobile learning model to be applied in a face-to-face university environment. As far as innovation related processes go, the implementation of mobile learning, implies defining a road map on the basis of strategic planning. It is also important to apply an action research approach in the implementation process of the model. In analyzing in depth this innovative mobile learning process, there are key factors to consider. First, there are factors related to the technology necessary for the implementation of the model—both hard and soft requirements. Second, there are cultural issues related to the use of non-native internet professors of innovative technologies. Finally, there are challenges related to defining, exactly, those educational strategies to be handled through mobile devices. This chapter focuses on the critical factors involved in integrating mobile learning into a hybrid educational model at a Mexican university.

INTRODUCTION

Mobile learning has become one of the most challenging advances in educational technology. This innovation has been integrated within a face-to-face mode of higher education, to enhance a student-centered approach oriented toward a more personalized learning (Alexander, 2004; Belanger, 2005; Herrington, Herrington, Mantei, Olney & Ferry 2009; McConatha, Paurul, & Lynch, 2008; Spectrum, 2009; Trinder, Magill, & Roy, 2005; Wagner, 2005). A challenge with the implementation of mobile learning projects arises due to the lack of experience related to a full integration
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within educational face to face environments; also
due to the speed at which technology develops
in contrast with human -professors- adaptation
to change; and finally, and paradoxically, it is
also due to the parallel development of computer
technologies devoted to education which compete
with professors’ attention and administrative re-
sources, and with mobile initiatives. Nowadays,
we are facing what can be called an educational
convergence related to digital convergence. E-
learning is moving toward e-learning 2.0, thereby
incrementing technological possibilities to de-
lever content (Downes, 2005). These advances
enhanced by integration of mobile devices allow
the creation of educational platforms which col-
laborate in richer environments favored by web
2.0 technologies (Spikol, Milrad, Maldonado &
Pea, 2009). Web tools such as blogs, wikis, and
podcasts are integrated to create social learning
environments in which mobile devices are more
and more used along with computers, leading to
“educational convergence in hardware, software
and educational activities (Conole, de Laat, Dil-
on;& Darby, 2008; Richardson, 2009). This new
state of the art educational technology demands
a correlating pedagogical evolution (Herrington,
et. al 2009) and favors the broadness of hybrid
learning strategies. The evolution towards a
technology which supports a social learning
process has as its counterpart the integration of
“education on demand” in mobile learning solu-
tions. These are products which are at the same
time a possibility for and a result of technological
developments. When implementing mobile learn-
ing as a component of hybrid learning strategies
for Campus Undergraduate Educational classes,
a systems approach is needed in such a way as to
face technological, human, as well as educational
and administrative factors -- looking forward to a
real assimilation of mobile learning in teaching-
learning strategies.

BACKGROUND

One of the challenges for higher education insti-
tutions in the new millennium is the necessity to
manage an approach of continuous innovation in
the design of educational environments, in order
to foster learning. Learning borders also expand,
from professional specialization to enhancing the
acquisition of competencies demanded by the labor
market in multicultural environments (Oblinger &
Rush, 1997; Wagner, et al., 2006). We have now
reached a point in which Instructional Design
integrates educational objectives, oriented toward
developing knowledge about concepts and skills
to perform processes related to specific fields of
specialization; as well as objectives oriented to-
ward the acquisition of thinking and technological
skills – what is often called “transversal.”

Educational technologies evolve in parallel
with information and communication technolo-
gies; and this evolution leads to digital conver-
gence. On the other hand, the application of tech-
nology in education little by little has demonstrated
its potential to be used as a delivery media, as
well as a source of educational tools, in face-to-
face environments. It implies that students are
asked to manipulate technology in order to carry
out active learning activities (Felder & Brent,
2003; Prince, 2004; Seppälä & Alamäki,2003),
satisfying both specific knowledge acquisition as
well as transversal skills development, engaging
them in what Herrington & Kervin (2007) call
Authentic Learning. Applying a comprehensive
analysis to these trends, we can see that we are
now facing what can be called a “face-to-face
and distance learning strategies convergence,”
or the arising of the sixth generation of learning
in which converge distance learning evolves with
face-to-face student centered learning1.
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