Chapter 56

ICT Use in Universities:
An Educational Model for Digital Natives

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ABSTRACT

This chapter analyzes the adequacy of two university education models according to their Information Communications Technology (ICT) usage: One model is based on the use of ICT as a cornerstone and a cohesive element of the teaching-learning process, whereas the other considers ICT a mere teaching support tool. The preliminary results obtained from a review of case studies reveal that ICT use is not only a means for improving the teaching–learning process but also an emerging prerequisite, demanded by digital natives in their choice of a university. Furthermore, it represents an additional valued outcome of the teaching–learning process.

1. INTRODUCTION

In the current socio-economic and technological environment, with persistent questions about the competitiveness of productive systems, higher education attains special relevance as a strategic and adaptive option. European universities, including those in Spain, are therefore undergoing

a process of deep renovation, especially under the influence of the European Space for Higher Education (ESHE).

In the case of students born in the digital age, and who require continuous training throughout their lives, universities must change their educational systems, aiming for a new model in which: (a) the student becomes the main focus of teaching and learning, (2) the teacher acts as a guide for students, facilitating the use of learning

resources and tools, and (3) there is an emphasis on competencies and skills that students should acquire, and which are demanded by the market.

Salinas (2002) shows how the use of ICT by teachers and students facilitates teaching and learning. Nevertheless, when faced by similar situations, each educational centre may show different levels of ICT use. In such a case, as Roberts et al. (2000) point out, this affects the educational model proposed and consequently the role of the student and teacher, as well as the technological applications used.

Given the above situation, this paper examines the suitability of two models of university education, which are defined in terms of their use of ICT. First, the so-called *standard model* of education is a university in which various ICTs (such as computers, etc.) are merely additional tools (like a blackboard, books, etc) which back up the teaching-learning process. The second model, known as *advanced or radical,* proposes an intensive use of ICT, given that the internet is the environment in which it develops the teaching-learning process. In this sense, the ultimate goal of this chapter is to show the great value of the intensive use of ICT in the learning processes, especially when students and teachers show a high degree of knowledge and active participation towards ICT. Preliminary results suggest that the use of ICT provides a means of improving the teaching-learning process. Furthermore, the "digital natives" who attend universities often acquire the use of ICT before they attend college, because they value the use of ICT as additional skills obtained through the process of teaching and learning.

2. BACKGROUND

Never has education been so much in the spotlight, nor has it previously captured quite so much attention or spurred so much controversy. A growing conviction asserts that education must serve as an engine of social development, increasing levels of welfare and prompting new kinds of economic growth.

Even if everyone agrees about the importance of high-quality education for all citizens though, opinions about how to deliver it vary widely. Education and training take place in multiple venues and persist in a lifelong process, marked by a vast number of different types of stakeholders. The traditional roles of the family and the school are becoming more blurred, even as a host of other stakeholders, whether intentionally or not, enter the arena and play educational roles in the contexts of leisure activities, the media, the corporate world, and other public spheres.

For these more and less conventional stakeholders, information and communication technologies (ICT) offer networks with diverse purposes and sizes, creating, disseminating, reshaping, and exchanging information freely. The phenomenon of the Internet has brought a new dimension to higher education—a dimension that remains difficult to grasp in its entirety (Cebrian De la Serna and Vain, 2008).

In fact, the Internet has changed the role played by universities in the educational process. Thus, today, the traditional educational centres have gone from being the hub of the educational system to becoming one of the nodes of the network of networks where the "user-student" moves in a more flexible way through cyberspace. Moreover, the elimination of time and space barriers, which the Internet provides, brings about the emergence of new educational organizations which are constituted as partnerships or networks of institutions and educational systems, characterized by modularity and interconnection. However, this situation requires educational institutions to be more flexible in their procedures and administrative structures in order to accommodate alternative training systems which are more responsive to the needs which this new situation presents (Bautista, 2006).

For Higher Education Institutions to respond effectively to the challenge of the intensive use of

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