

## Chapter 71

# The Impact of Web 2.0 in the Teaching and Learning Process

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### ABSTRACT

*Web 2.0 represents the second generation of the Web applications, based on online services collaboration and sharing that promote different ways of interaction between people. These applications provide several collaboration and communication opportunities, like social interaction, feedback, conversation, and networking, thus being a perfect environment for the teaching and learning context. The main goal of this chapter is to present the most used Web 2.0 tools, their major advantages and disadvantages, and their specificity when used in the teaching and learning process. It is believed that their use can greatly improve the teaching and learning process and, consequently, the need to adjust the traditional practice to the new technological paradigm emerges.*

### INTRODUCTION

In recent years, the use of Information and Communication Technologies (ICTs) has grown drastically in education, providing access to information in an easier and more convenient way. These ICTs support the process of teaching and learning, and are the usual source of the modalities of Distance Education (DE). The diversity

of interactive multimedia equipment, as well as the existence of the broadband communication networks, provide students with a set of endless information and education arrangements underpinned by new ICTs. On the other hand, the evolution of Web technologies from Web 1.0 to Web 2.0 has also been an important factor for the study of new models of teaching and learning. Nowadays, teachers must not only transmit

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knowledge using traditional methods, but must use appropriate methods adapted to the new learning standards of new students, called digital natives (Prensky, 2001a). This new phenomenon is not intended to underestimate the role of teachers in the classroom, but rather to adjust the traditional approaches to the new technological paradigm, in order to contribute to the improvement of teaching and learning process. In this context, ICTs in education are able to highlight the role of education platforms or Learning Management Systems (LMS) (such as Moodle) as tools to support the teaching and learning process. In most cases, these platforms are used as a repository of documents available for consultation by teachers and students.

Web 2.0 is a second generation of Web based on services online, collaboration and sharing and represents a paradigm shift in the way the Internet is used. It involves a more open approach to the Internet, and user generated contents, that are posted using tools such as Blogs, Wikis, Social Networks, Social Bookmarks, RSS and Media Sharing. Web 2.0 applications reflect different ways of promoting interaction between people, supporting social interaction, feedback, conversation and networking.

The Web 2.0 tools have great potential on the educational context, improving the teaching and learning process, and consequently contributing to the adjustment of the traditional approaches to the new technological emergent paradigm. The main goal of this chapter is to present the most used Web 2.0 applications related to the teaching and learning activity and to discuss their major advantages and disadvantages.

It starts by analyzing the new paradigm in teaching and learning processes. Next, the main Web 2.0 tools are presented through a brief description, including their pros and cons. Afterwards the authors analyze the use of Web 2.0 in teaching and learning process, their advantages and disadvantages and their use by e-learning platforms. Finally, some conclusions and future work are presented.

## **TEACHING AND LEARNING PROCESS: THE NEW PARADIGM**

Most students today in higher education are considered digital natives. The fact that on their day-to-day live, students are native users of the Web tools facilitates greater interactivity (Collis & Moonen, 2008). According to Prensky (2001a, 2001b) digital natives are everybody that were born after 1980, and those who were born before that year are considered digital immigrants. The digital natives think and process information differently from their predecessors (Prensky, 2001a). Therefore, teachers today can not assume that students learn through the same methods that they learned. ICTs that have emerged in the 1990's caused a shift in the way of communicating and data transmission, and have also caused changes in the people own thought patterns and an how they learn the content (Prensky, 2001a).

Currently, universities have these new students and therefore, they should adapt teaching methods, which include the adoption of ICTs for the transmission of knowledge. In fact, digital natives and students of technical subjects use more technology when compared to digital immigrants and student of non-technical subjects (Margaryan, Littlejohn, & Vojt, 2011). However, despite the facts showing a clear need for the adoption of ICTs in new teaching methods, the decisions of teachers and administrators should not be based exclusively on students' preferences and on the trends in technology. There must be an understanding of the educational value of these technologies, in order to improve the process and learning outcomes. In this sense, it is necessary to explore the different technologies in teaching, to evaluate their effectiveness in practice within each institution (Kennedy, Judd, Churchward, Gray, & Krause, 2008; Margaryan, *et al.*, 2011), and based on this, adopt them in a prudent and progressive way.

In general, universities are concerned about motivating students based on methodologies of

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