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Chapter XI

E-Learning as a Catalyst for Educational Innovation

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ABSTRACT

As a form of distance learning, e-learning has become a major instructional force in the world. In this chapter, initiatives regarding e-learning and its impacts on instructional design, on school management and on the community are described and discussed in order to show different aspects of e-learning environments and their impact on related individuals or institutions. Future trends in e-learning are presented in connection with expected technological improvements and key points needing special care in the development of future e-learning environments are mentioned in the light of diffusion theory.

INTRODUCTION

Most of the discussions related to education are about technological innovations. Indeed as Rogers (1995) stated, we often use the word "innovation" and "technology" as synonyms. A quick analysis of the educational projects all over the world shows us that it is not possible to define a future vision of education without technology, especially e-learning.

E-learning refers to the use of Internet technologies to deliver a broad array of solutions that enhance knowledge and performance (Rosenberg, 2001, p. 28.) E-learning is a form of distance learning which has become a major instructional force in the world. One of the primary goals of higher education institutions today is to start distance education courses and use the World Wide Web (WWW) as an instructional delivery environment.

Besides the technological developments, the last two decades have brought a tremendous increase in knowledge in education, particularly in learning. The emerging views of learning which should be taken into consideration for every learning environment could be stated as follows: Personalized, flexible and coherent (learning is connected to real-life issues); not bounded by physical, geographic or temporal space; rich in information and learning experiences for all learners; committed to increasing different intelligences and learning styles; interconnected and collaborative; fostering interorganizational linkages; engaged in dialogue with community members, accountable to the learner to provide adaptive instructional environments (Marshall, 1997).

WWW is an environment that fits the new paradigm of learning and facilitates "e-learning," which faces a challenge of diffusion. Diffusion is defined by Rogers (1995) as the process by which an innovation is communicated through certain channels over time among the members of a social system. There are four main elements of diffusion: innovation characteristics, communication channels, time and a social system. The innovation characteristics are relative advantage (need), compatibility, complexity, triability and observability.

The initiatives described and discussed in this chapter aim to show different aspects of e-learning environments and their impact on related individuals or institutions:

1. E-learning and its impact on instructional design
2. E-learning and its impact on school management
3. E-learning and its impact on the community

Moreover, such e-learning projects are discussed in terms of diffusion of innovation and educational change in reference to Rogers (1995) and Fullan (1991).

E-LEARNING AND ITS IMPACT ON INSTRUCTIONAL DESIGN

E-learning not only opens up new ways of learning and teaching, but also leads to a new way of thinking and organizing learning content. Collaborations among different stakeholders cause new standards for design of knowledge on the Internet. In traditional computer based instruction, content comes in units called courses. However a new paradigm for designing instruction, grounded in the object oriented notion of computer science, is called "learning objects."

Learning object is defined by the Learning Technology Standards Committee (2002) of the Institute of Electrical and Electronics Engineering (IEEE) as any entity, digital or non-digital, which can be used, reused or referenced during technology-supported learning. The features of learning objects are self-contained, interactive, reusable, and