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## **Chapter II**

# **Toward Effective Use of Multimedia Technologies in Education**

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## **Abstract**

*While multimedia technologies are being used in educational contexts, the effective use of multimedia in these contexts remains problematic. In an attempt to contribute towards addressing this problem, this chapter presents a set of conceptual guidelines and a practical planning framework that is intended to inform the planning and design of more effective multimedia integration into educational contexts. A mixed-mode approach is advocated in this chapter. Multimedia technologies are viewed as part of a tool-set and tool selection should be appropriate to curriculum content and to the teaching and learning context.*

## Introduction

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Whether or not multimedia technologies should be used in educational contexts seems to no longer be an issue. Multimedia technology is pervading almost all aspects of existence. The rationale for its use in educational contexts is grounded in social, economic, and pedagogical reasons. However, what does remain problematic is the effective use of multimedia technology in educational contexts. At the crux of addressing this problem is the notion that effective integration of multimedia in the curriculum depends not on the technology itself but rather on educators' knowledge, assumptions, and perceptions regarding the technology and its implementation in the specific learning context (Jackson & Anagnostopoulou, 2000; Bennet, Priest, & Macpherson, 1999). From a pedagogical perspective, it is generally accepted that multimedia technologies have the potential to reshape and add a new dimension to learning (Relan & Gillani, 1997; Lefoe, 1998). In reality, however, this potential has largely failed to be realized. The fundamental belief underlying this chapter is that this potential will only be realized by informed pedagogical decision making and the formulation of teaching strategies designed to exploit multimedia technologies for maximum effectiveness within a particular learning situation. From this perspective, educator development that focuses on pedagogical change is a pivotal aspect of the effective use of multimedia technologies in educational contexts.

The term "multimedia technologies" is being used in this chapter to mean the entirely digital delivery of content using any integrated combination of audio, video, images (two-dimensional, three-dimensional), and text. In its most primitive form, the term "multimedia" is sometimes defined as content presentation using a combination of media [i.e., sound, images (static, moving, animated, video), and text]. From this perspective, any presentation that involves the use of, for example, face-to-face teaching, video recorder, and a slide show could be considered multimedia.

The distinguishing feature of digital multimedia, as used in this chapter (as opposed to the primitive form defined above), is the capacity to support user interaction. Hence, the term "multimedia technologies," as used in this chapter, will always imply that there is an element of "interactivity" present. The concept of interaction is considered along two dimensions: the capacity of the system to allow an individual to control the pace of presentation and to make choices about which pathways are followed to move through the content, and the ability of the system to accept input from the user and provide appropriate feedback to that input. Multimedia technologies may be delivered on computer via CD-ROM, DVD, or via the Internet, or on other devices such as mobile phones and personal digital assistants capable of supporting interactive and integrated delivery of digital audio, video, image, and text data. Multimedia technologies as referred to

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