Multimedia Instructional Materials in MIS Classrooms[1]

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INTRODUCTION

Researchers and major computing associations such as the Association of Information Systems (AIS) and the Association of Computing Machinery (ACM) have invested much effort in the last two decades to shape the information system (IS) curriculum in a way that addresses developments and rapid changes in the IS industry (Gorgone, Gray, Feinstein, Kasper, Luftman, Stohr et al., 2000; Nunamaker, Couger & Davis, 1982). A major objective has been to help overcome the skill shortages that exist in the IS field, a trend that is expected to continue in the years ahead (Gorgone et al., 2000). While there exist a plethora of students joining IS programs around the world (usually for the remunerative promises that goes with an IS degree), students do not seem to gain the kind of knowledge and technical expertise needed to face real-world challenges when they take on positions in the business world. There is, therefore, the need to prepare IS students for real-world challenges by developing their technical and decision-making skills.

The purpose of this article, therefore, is to help IS researchers and educators evaluate the potential of LITEE[2] multimedia instructional materials as a pedagogy that assists instructors in conveying IT concepts to students. Another purpose is to present an instruction manual that includes step-by-step instructions about how to use LITEE multimedia instructional materials in a typical IS introductory class. In addition, we outline the most critical issues that should be considered prior to using multimedia instructional materials developed by LITEE and similar organizations. This article should be especially useful to instructors and administrators who desire to use such multimedia instructional materials in IS undergraduate classrooms.

This article is organized in six sections. Following this introduction, we define multimedia, followed by a discussion of the benefits and limitations of using multimedia instructional materials in IS undergraduate classrooms. Then we offer practical guidance for those using multimedia instructional materials in IS undergraduate classrooms. Next, we suggest evaluating students' performance when using multimedia instructional materials. And finally, we conclude the instruction manual.

DEFINING MULTIMEDIA

The term multimedia generally refers to the combination of several media of communication, such as text, graphics, video, animation, music and sound effects (Gaytan & Slate, 2002, 2003). When used in conjunction with computer technology, multimedia has been referred to by some as interactive media (Fetterman, 1997; Gaytan & Slate, 2002, 2003). Gaytan and Slate cite four components essential to multimedia: (a) a computer to coordinate sound, video and interactivity; (b) hyperlinks that connect the information; (c) navigational tools that browse the Web site or Web page containing the connected

information; and (d) methods to gather, process and communicate information and ideas. Multimedia does not exist if one of these four components is missing, and depending upon which component is missing, the product might be referred to by a different name. For example, the product might be referred to as (a) "mixed media" if the component that provides interactivity is missing; (b) a "bookshelf" if it lacks links to connect the information; (c) a "movie" if it lacks navigational tools allowing the user to choose a course of action; and (d) "television" if it does not provide users the opportunity to create and contribute their own ideas (Gaytan & Slate, 2002, 2003). Thus, multimedia, appropriately defined, is "the use of a computer to present and combine text, graphics, audio and video with links and tools that allows the user to navigate, interact, create and communicate" (Gaytan & Slate, 2002, 2003).

BENEFITS AND LIMITATIONS OF USING MULTIMEDIA INSTRUCTIONAL MATERIALS IN UNDERGRADUATE IS CLASSROOMS

Nielsen (1995) reports that multimedia systems enable non-linear access to vast amounts of information. Other researchers show that with multimedia users can explore information in-depth on demand, and interact with instructional materials on a self-paced mode (Barrett, 1988; Collier, 1987). Others state that multimedia is attention-capturing or engaging to use and represents a natural form of representation with respect to the workings of the human mind (Delany & Gilbert, 1991; Jonassen, 1989). Oliver and Omari's (1999) study suggested that while print (paper-based) instructional materials provided a sound means to guide and direct students' use of the World Wide Web (WWW) learning materials, the actual WWW materials were more suited to supporting interactive learning activities rather than conveying content and information. Sankar and Raju (2002) report that multimedia instructional materials produced at their laboratory and used in business classrooms are aimed at both improving what students learn and the way students learn. Thus, incorporating IT – in this case, multimedia instructional materials – into higher education could improve the quality of learning for students (Alexander, 2001).

Benefits

Several articles (Mbarika, 1999; Mbarika, Sankar & Raju, 2003; Mbarika, Sankar, Raju & Raymond, 2001; Raju & Sankar, 1999; Sankar & Raju, 2002) have evaluated the use of multimedia instructional materials in IS undergraduate classrooms and found the students' responses to be favorable. In using multimedia instructional materials in undergraduate classes, and in our analysis of electronic journals and other students' comments, we have identified the advantages/strengths of multimedia to be as follows:

- Brings theory and practice together in classrooms
- Facilitates the development of higher-order cognitive skills in students
- Provides an informative and fun learning experience
- Encourages active teamwork among students
- Facilitates the development of personal attributes and traits
- Brings excitement of real-world problems into classrooms
- Offers great insight into technology
- Interrelates technical and managerial issues
- Enables and facilitates the development of critical thinking and problem-solving skills.

Limitations

Although this method of instruction has numerous advantages, it is not without its share of limitations/weaknesses. In using multimedia instructional materials in undergraduate classes, we have identified some of the noted limitations/weaknesses to be as follows:

- Requires a heavy investment of energy and planning on the part of the instructor.
- Information may be out of date due to the lengthy development and production cycle of multimedia instructional materials.
- Accreditation agencies may not fully appreciate the uniqueness of such a pedagogy and, thus, may discount its usefulness.

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