

# **MULTIMEDIA LEARNING: A NEW PARADIGM IN EDUCATION**

by Ms. Neo Mai\* and Mr. Ken Neo TK\*

## **ABSTRACT**

Since the PC (personal computer) was first introduced in the 1970s, its processing power has progressed by leaps and bounds. The PC is now able to process the multimedia elements as well as become a communication device. With this advancement, the Information and Communication Technology (ICT), particularly the multimedia technology, has rapidly permeated and increasingly altered the landscape in the educational arena. In this paper, we focus on using multimedia as a strategic instructional media and the infusion of ICT and the multimedia technology into education which has created an impact on the traditional instructional communication process (ICP). This has led to a new paradigm in education and the evolution of new concepts in content development and a number of innovative methods in which information can be communicated to the learners. This new learning environment will undoubtedly influence the way teachers teach and students learn.

## **INTRODUCTION**

The ICT (Information and Communication Technology) revolution is fast changing the world, and creating a generation that is media-hungry and technologically savvy. This new generation is using digital media for learning and communicating (Tapscott, 1998). Business, industry, the military and educational institutions have recognised this potential and used computers as instructional tools. However, in the context of education, technology also refers to the process of applying the tools for educational purposes. In other words, “educational technology is a combination of the processes and tools involved in addressing educational needs and problems, with an emphasis on applying the most current tools: computers and their related technologies” (Roblyer and Edwards, 2000).

The advent of multimedia and multimedia technologies has changed the way educators teach and students learn. With multimedia, the communication of the information can be done in a more effective manner and it can be an effective instructional medium for delivering information. Multimedia application design offers new insights into the learning process of the designer and forces him or her to represent information and knowledge in a new and innovative way (Neo and Neo, 2000). The use of multimedia as a platform for teaching is made even more possible with the availability of the MPCs (Multimedia PCs) that are powerful, fast, and able to process all media elements effortlessly and quickly, and multimedia software packages that are user-friendly yet power-packed.

\* Centre for Innovative Education (CINE) Faculty of Creative Multimedia, Multimedia University, Cyberjaya, Malaysia, [kneo@pc.jaring.my](mailto:kneo@pc.jaring.my).

Multimedia “provides a means to supplement a presenter’s efforts to garner attention, increase retention, improve comprehension, and to bring an audience into agreement”, which consequently results in people remembering 20% of what they see, 40% of what they see and hear, but about 75% of what they see and hear and do simultaneously (Lindstrom 1994).

## MULTIMEDIA AS A TEACHING AND LEARNING TOOL

In the traditional information communication process (ICP), the teacher is the source of the knowledge and presents the knowledge to the students, who are in turn, passive receivers of the information. With multimedia, the communication of the information can be done in a more effective manner and it can be an effective instructional medium for delivering educational information. This is because it enables the teacher to represent the information in various media, i.e., via sound, text, animation, video and images. With multimedia, the teacher is now the director of the knowledge and can use the various combinations of media elements to create interactive educational content. The result is a stimulating environment for learning and retaining the information delivered. The marriage of content and multimedia technology results in interactive multimedia materials which can be delivered to the students in teacher-centered, student-centered, or mixed teaching and learning modes (Figure 1).

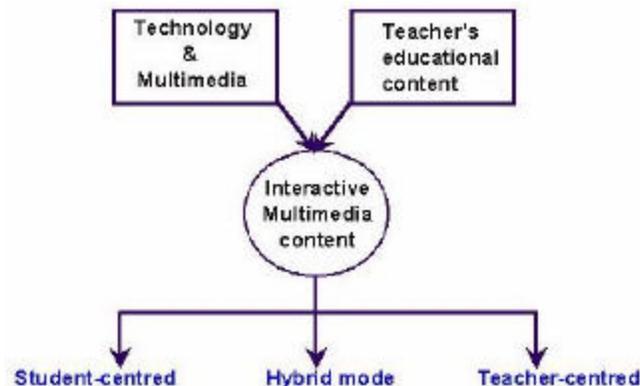


Figure 1. Using multimedia to represent content and delivering via various methods

In the teacher-centered mode, the teacher is the one in control of the information that is received by the students and is responsible for how much information is being disseminated to them. The teacher-centred methods include presentations and demonstrations to process the information. Students are also able to retain and recall the information as well as obtain mastery in the subject matter with drills and practices, and tutorials, which are highly interactive. The multimedia courseware can also be packaged on the CD-ROM and delivered in a networked classroom leading to a teacher-centered mode where the courseware is opened on their PCs and the students follow the teacher’s lecture on their PCs.

In the student-centered method, the students construct their own knowledge and bring their authentic experiences into the learning process with the teacher as the facilitator. The multimedia courseware content can also be packaged as a Web file and delivered on the Internet in a Web browser can result in online courses where the students access the courseware from a browser on their PCs. The student is then free to engage in learning on his or her own time and pace, and consequently, the learning mode is student-centered. This multimedia material can be used to foster team-processing and active learning as with collaborative and cooperative methods. This encourages higher-level learning, increases comprehension and retention rates, and focuses on the total development of the student in self-accessed and self-directed learning.

In the mixed mode, the teacher has the flexibility to incorporate the two teaching and learning approaches whenever they deem them useful, to increase and enhance their students' learning processes. Here, the same multimedia courseware content can also be packaged and delivered over satellite and broadband technologies for distance learning. Here, the student learns the materials on his or her own time and pace, and interacts with the teacher via video-conferencing in real-time.

## CONCLUSION

There is little doubt that the changing role of education is currently being reinforced with the integration of multimedia technologies. This has led to a new paradigm in education and the evolution of new concepts in content development and a number of innovative methods in which information can be communicated to the learners. This new learning environment will undoubtedly influence the way teachers teach and students learn.

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