



## MULTIMEDIA IN EDUCATION

## EDUCATION

<b>V. Kamatchi</b>	Assistant Professor in Commerce Achariya College of Education Villianur, Puducherry – 605 110
<b>Dr. S. Leo Stanly</b>	Associate Professor in Education, Department of Education, DDE, Alagappa University Karaikudi - 630 003

## ABSTRACT

The world in which we live is changing rapidly and the field of education is experiencing these changes in particular as it applies to Media Services. The old days of an educational institution having an isolated audio-visual department are long gone! The growth in use of multimedia within the education sector has accelerated in recent years, and looks set for continued expansion in the future. A 21st century classroom must engage and energize all students to be active participants and should also involve in developing 21st century learning skills like the information and communication skills, thinking and problem solving skills, interpersonal and self-directional skills etc... This could be possible by using multimedia in education. This paper discusses the vital place of multimedia in education.

## KEYWORDS

Multimedia, Education, Teaching, Learning

## INTRODUCTION:

“Tell me, and I will forget; show me and I may remember; involve me and I will understand”

Multimedia is content that uses a combination of different content forms such as text, audio, images, animations, video and interactive content. Multimedia contrasts with media that use only rudimentary computer displays such as text-only or traditional forms of printed or hand-produced material. Multimedia can be recorded and played, displayed, interacted with or accessed by information content processing devices, such as computerized and electronic devices, but can also be part of a live performance. Multimedia devices are electronic media devices used to store and experience multimedia content. Multimedia is distinguished from mixed media in fine art; for example, by including audio it has a broader scope. In the early years of multimedia the term "rich media" was synonymous with interactive multimedia, and "hypermedia" was an application of multimedia.

## Characteristics of a Multimedia System

A Multimedia system has four basic characteristics:

- Multimedia systems must be **computer controlled**.
- Multimedia systems are **integrated**.
- The information they handle must be represented **digitally**.
- The interface to the final presentation of media is usually **interactive**.

## Categorization:

Multimedia may be broadly divided into **linear** and **non-linear** categories:

- Linear active content progresses often without any navigational control for the viewer such as a cinema presentation;
- Non-linear uses interactivity to control progress as with a video game or self-paced computer-based training. Hypermedia is an example of non-linear content.

## Elements of multimedia

A *Multimedia Learning* environment involves a number of components or elements in order to enable learning to take place. Hardware and software are only part of the requirement. As mentioned earlier, multimedia learning integrates five types of media to provide flexibility in expressing the creativity of a student and in exchanging ideas

## Text

Out of all of the elements, text has the most impact on the quality of the multimedia interaction. Generally, text provides the important information. Text acts as the keystone tying all of the other media elements together. It is well written text that makes a multimedia communication wonderful.

## Sound

Sound is used to provide emphasis or highlight a transition from one

page to another. Sound synchronized to screen display, enables teachers to present lots of information at once. This approach is used in a variety of ways, all based on visual display of a complex image paired with a spoken explanation (for example, art – pictures are 'glossed' by the voiceover; or math – a proof fills the screen while the spoken explanation plays in the background). Sound used creatively, becomes a stimulus to the imagination; used inappropriately it becomes a hindrance or an annoyance. For instance, a script, some still images and a sound track, allow students to utilize their own power of imagination without being biased and influenced by the inappropriate use of video footage. A great advantage is that the sound file can be stopped and started very easily.

## Video:

The representation of information by using the visualization capabilities of video can be immediate and powerful. While this is not in doubt, it is the ability to choose how we view, and interact, with the content of digital video that provides new and exciting possibilities for the use of digital video in education. There are many instances where students, studying particular processes, may find themselves faced with a scenario that seems highly complex when conveyed in purely text form, or by the use of diagrams and images. In such situations the representational qualities of video help in placing a theoretical concept into context. Video can stimulate interest if it is relevant to the rest of the information on the page, and is not 'overdone'.

One of the most compelling justifications for video may be its dramatic ability to elicit an emotional response from an individual. Such a reaction can provide a strong motivational incentive to choose and persist in a task. The use of video is appropriate to convey information about environments that can be either dangerous or too costly to consider, or recreate, in real life. For example: video images used to demonstrate particular chemical reactions without exposing students to highly volatile chemicals, or medical education, where real-life situations can be better understood via video.

## Animation

Animation is used to show changes in state over time, or to present information slowly to students so they have time to assimilate it in smaller chunks. Animations, when combined with user input, enable students to view different versions of change over time depending on different variables. Animations are primarily used to demonstrate an idea or illustrate a concept. Video is usually taken from life, whereas animations are based on drawings. There are two types of animation: Cel based and Object based. Cel based animation consists of multiple drawings, each one a little different from the others. When shown in rapid sequence, for example, the operation of an engine's crankshaft, the drawings appear to move. Object based animation (also called slide or path animation) simply moves an object across a screen. The object itself does not change. Students can use object animation to illustrate a point – imagine a battle map of Gettysburg where troop movement is represented by sliding arrows.

### Graphics

Graphics provide the most creative possibilities for a learning session. They can be photographs, drawings, graphs from a spreadsheet, pictures from CD-ROM, or something pulled from the Internet. With a scanner, hand-drawn work can be included. Standing commented that, "the capacity of recognition memory for pictures is almost limitless". The reason for this is that images make use of a massive range of cortical skills: color, form, line, dimension, texture, visual rhythm, and especially imagination.

### Advantages of multimedia

- It helps the learners to express and represent their prior knowledge and provides them with many learning opportunities.
- Through participation in multimedia activities, students can learn real-world skills related to technology. They will know the value of teamwork and the importance of effective collaboration techniques.
- The teacher is no longer the center of attention as the source of information, but rather plays the role of facilitator, setting project goals and providing guidelines and resources, moving from student to student or group to group, providing suggestions and support for student activity.
- It provides a non-threatening environment for a learner to study at their own pace.
- It facilitates teaching-learning process. The combination of text, sound, and graphics holds the attention of students and makes students innovative by making their studies more meaningful. Most learners enjoy working with multimedia.
- It brings forth students' talent in various ways. It empowers students to work as a designer while designing their slides, browsing and interpreting the information and then representing their knowledge to others.
- It involves interaction between the learner and the various elements on the screen.

### Educational Requirements

Employing multimedia tools into the learning environment is a rewarding, but complex and challenging task. All of the multimedia formats available: text, sound, video, animation and graphics, already exist in one form or another in most libraries. Students can explore an almost infinite variety of information. All these explorations can certainly lead to new discoveries, but unless consumption is followed by production, the story ends. Without a chance to use their new discoveries and demonstrate what they have learned, the knowledge gained soon becomes the knowledge forgotten. Giving students an opportunity to produce multimedia documents of their own provides several educational advantages. Students work with the same information from four perspectives:

- 1) as researcher, they must locate and select the information needed to understand the chosen topic;
- 2) as authors, they must consider their intended audience and decide what amount of information is needed to give their readers an understanding of the topic;
- 3) as designers, they must select the appropriate media to share the concepts selected; and
- 4) as writers, they must find a way to fit the information to the container including the manner of linking the information for others to retrieve.

### Role of teachers in multimedia approach

- Teacher has to adopt a number of method and techniques. Teacher has to be aware of the different available media and their availability.
- Teacher should be physically competent to use and demonstrate the use of the different media.
- Teacher should be skillful enough to make a judicious choice of media and competent enough to mix them sequentially and in an orderly manner.
- Teacher's role is that of a facilitator or manager of activities.

### Conclusion:

As a move into the 21<sup>st</sup> century many factors are bringing strong forces to bear on the adoption of multimedia in education and contemporary trends suggest will soon see large scale changes in the way education is planned and delivered as a consequence of the opportunities and affordances of multimedia. It is believed that use of multimedia in education can increase level of achievement of students. It can help to

enhance the equality in education with advance teaching methods, improve learning outcome system. Extrapolating current activities and practices the continued use and development of multimedia within education will have a strong impact on what is learnt, how it is learnt, when and where learning take place and who is learning and who is teaching.

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