MULTIMEDIA

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Abstract
Multimedia Instrumental Network System based on Information and Communication Technology is able to fulfill the learner needs and expectations, to attract the learner's attention in the classroom, to involve them in a healthy learning environment. The features of text, sound, images and animations are creating major effects in multimedia computer. Multimedia is the exciting combination of computer hardware and software that allows you to integrate video, animation, audio, graphics, and test resources to develop effective presentations on an affordable desktop computer.

Introduction

Multimedia is a term frequently heard and discussed among educational technologists today. Unless clearly defined, the term can alternately mean a judicious mix of various mass media such as print, audio and video or it may mean the development of computer-based hardware and software packages produced on a mass scale and yet allow individualized use and learning. In essence, multimedia

merges multiple levels of learning into an educational tool that allows for diversity in curricula presentation. Multimedia is applicable in all fields, such as, management, education, business, broadcasting etc.., in different forms. In the field of management, multimedia computer is helpful as a wonderful teaching material where as in education multimedia is applied as an instrumental and courseware material. Likewise, is exists now days in all fields, Application of multimedia is different fields is shown in the figure.

Nature of Multimedia Approach
- Multimedia approach uses a number of media, devices, techniques in the teaching learning process.
- Multimedia approach can convey vast information and provide many sources from which student can access the information.
- Multimedia approach will improve the teaching learning process.
- Multimedia approach is not restricted to a single type of learning style. It can provide the support of a wide range of activities.
- Multimedia approach aims at providing meaningful learning experience via a mix of media in order to achieve predetermined objectives.
- Multimedia approach provides the opportunity to gain mastery of competencies and skills.
- The choice of the media has to be done carefully so that one does not hamper or reduce the effect of the other. That is each media must complement the other.
- Multimedia approach will enable the learner to get access to information in dynamic environment.

Procedure for Adopting Multimedia Approach:
The following are the six steps to be followed while adopting the Multimedia Approach

First Stage
- In this stage the teacher initiates the teaching – learning activities.
- Teacher delivers a well prepared lesson based on the objectives formulated.
- Teacher could use a variety of media for his presentation.

Second Stage
- Teacher demonstrates a specific and specialized unit using a mix of media.
- The teacher may provide learner with programmed learning materials, cassettes, CD's etc.

Third Stage
- This is a preparatory stage for the learner before he stars independent learning.
- The student discusses with peer students and teachers his plan of action.

Forth Stage
- In this stage the learner actively participates.
- He uses variety of media and materials in his self-study.

Fifth Stage
- In this stage the learner integrates theory and practice.

Sixth Stage
- In this stage learner finds that teaching – learning activities have to be organized on a higher level.
- The student involved in critical analysis, critical evaluation and exchange of ideas.

Features of Multimedia Computer

The features of text, sound, images and animations are creating major effects in multimedia computer. They are discussed below:

- **Text:** As the text can be displayed in more than one format, the information shown can be made more understandable. Text should be kept concise, informative, and interesting. Presentation of text can also be done through animation. A variety of methods are available to animate text. Text has to be reduced to the essential minimum because of legibility and restricted number of characters that can be displayed on the screen.

- **Hypermedia:** Hypermedia involves the presentation of information the media to communicate most effectively its contents and provide the user with the meaning and the sequence of information in that most appropriate way for a given task. In the hypermedia system the authors can create a link of material that includes text, static graphics, animated graphics, video and sound.

- **Sound Effect:** Information can be conveyed with the sound effect. Audio sound can also be given as reinforcement to learners understanding. With a sound card the computer will sound as good as a stereo at home. Sound cards come with built-in-amplifiers, which make CD-ROM sound loud enough to be played back on speakers. Audio sound is available in different file formats and the appropriate file format should be selected. The professional sound editors can be utilized for enhancing the quality of sound. The sound effect makes the learners more involved and interesting in learning.

- **Images Effect (Graphics):** Static representation of an idea or concept on screen is called an image, which includes drawings, scanned photographs or live art, charts maps and graphs. Graphics can give the CD-ROM a special effect. They can lighten up a dry topic or illuminate a difficult and complex one. The graphic artist must know the objective of the courseware. The graphic artist must be aware of the pedagogical aspects involved in the CD-ROM. The graphics can be revised, manipulated, and improved with the help of graphics programmes such as Photoshop, etc. the graphics should be introduced only at selected places where

they are essential. Graphics reduces the difficulty in explaining the concept. The high quality resolution and colour in computer makes it very effective in the multimedia presentation.

- **Animation Effect:** Moving graphic images are named as animation, which are highly useful for illustrating concepts that involve movement and also a most powerful communication. This can make even the most complex processes simple and elegant if executed properly. Animation is computer-generated images. Series of images are displayed in rapid succession giving the illusion of movement. For illustration, the flight of bird or movement of a car or a man are difficult to show using text. Animation helps to make it easier to portray these concepts through multimedia application. There are two basic kinds of animation-frame and cast. Frame animation is similar to conventional manual animation; each frame is progressively different from the previous one. When these frames are displayed in rapid succession, the illusion of motion is created. Thus, animation helps the learners to witness the real situation and keep the concepts in their memories for a long period

- **Video Effect:** Video is a powerful communication tool. Video describes images of real events stored in a digital form. Video includes still video images, display of full motion, video from a VCR and digital storage and retrieval of compressed video signals. Video can be used in teleconferencing and teaching and sophisticated tutorials. In education any science experiment or operation of modern machine is difficult to portray through pictures only. When the same includes audio sound and text on the monitor, it would be more impressive and effective in explaining the concepts to the learners. The video files, containing both sound and moving pictures, take up lot of space and hence it is advisable to use very short video clips in the courseware. Moreover, it is always better to use highly compressed video file like 'MPEG'.

Advantages of the Multimedia Approach

- Multimedia approach enables the student to represent information using several different media.
- Can arouse the curiosity among the learner and provide them vivid impressions.
- Multimedia can take into account different learning styles – some pupil learn by interpreting text, while others require more graphical representations.
- Can develop a positive attitude among the learners towards the teaching-learning process.
- Multimedia Approach allows for self-pacing
- Technique of simulation can be effectively applied through the multimedia approach.
- Helps in development of higher order thinking skills.

- Multimedia approach provides the student the flexibility of 'any where', 'any time' learning.
- Helps in developing group and interpersonal skills.
- Effective remediation programmes can be implemented through the multimedia approach.
- Multimedia approach can bridge language barriers since audio is not the only means of communication.

Disadvantages of the Multimedia Approach
- Requires highly sophisticated infrastructure facilities, which may lead to heavy financial burden.
- Expertise and skill are required to operate the multimedia devices, which will lead to the problem of non-availability of human resources.
- Not feasible in the all topics of study.

Multimedia Classroom Environment for the Learners

Learner-centered education is about a shift or change in educational design from existing traditional to the innovative practice for the betterment education. Multimedia Instrumental Network System based on Information and Communication Technology is able to fulfill the learner needs and expectations, to attract the learner's attention in the classroom, to involve them in a healthy learning environment. Multimedia Instructional Network based teaching and learning consists of learning content, network computer lab, software for teaching and learning. The multimedia classroom environments for the learners are as follows:

Hand Rising

If learners get a doubt they can press the scroll lock key as a help button. The teacher hears the beep sound and gets a hand raise on a learner's computer icon. Then the teacher can get into conversation mode with the learner and clear his doubt, while all the other learners over hear them. Instead of conversation, the teacher and the learner chat through remote messaging board also. The advantage in this case is there is more flexibility in getting the doubt cleared than the conventional class.

File Transfer and File Submit

The teacher can transfer any file to any or all the learners to the desired location on the learner can also submit his work to teacher electronically. File submitted by the learner gets stored in a particular location of the teacher machine which the teacher can go through anytime.

Net Movie

Through net movie video of MPEG and DAT format [VCD movie] can be played on the teacher machine and broadcasted to all the learner's screens in real time. It

resembles as if the movie runs on the learner computers whereas, it is actually running on the teacher machine only, by the screen and the voice get transferred to the learner's machine. All this happens on just 100MBPS LAN network with no limitation on the number of learner machines. This is useful for showing a video content without the help of the projector.

Group and Group Talk

The teacher can divide the learners into groups at will. One learner in the group is selected to work like the teacher and execute functions like Broadcast, Audio broadcast, observe, Learner demo, Intercom, File transfer and Net Movie for that group. The selected learner and his computer act like the teacher and teacher-machine for that group. The learners can be divided into multiple voice and message chatting. This is an excellent tool for group discussion.

Remote Message: The teachers and the learner can communicate with each other by sending messages.

Smart Scroll: View the broadcasted screen in window mode with the teacher's mouse always in the centre.

One to One voice chat: The teacher can talk with any one logged in learner. The other learners won't be disturbed.

Constraints in Using Multimedia Computer
- Lack of trained people and necessary skills among the people and also in library professionals to use the multimedia system.
- Lack of software to integrate, control, coordinate, manage and adopt the various media for human computer interface.
- Lack of search and pattern recognition, capability for locating information.
- Lack of standardization.
- High cost to get the multimedia system.

Role of Teacher in Multimedia Approach
- Teacher has to adopt a number of methods and techniques.
- Teacher has to 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.
- Teacher has to lead his student for independent, individualized learning.

Conclusion

Education in considered as foundation stone for development of mankind. Modern Technologies play vital role in propagation of education from existing resources to each and every part of the world crossing all the geographical boundaries and social barriers. Transformation and revolution are improved by technology. It gives presence of mind to the human being. Multimedia is a powerful tool for problem – solving.

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