Effective teaching by technologies for progressive learning

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Abstract
New technologies like web-based PCs, Mobile phones, Satellites and Wireless technologies, and Internet etc. are helping the teachers and the students to gather and spread information which is normally not possible by any other way. Unlike the previous society the present information society has accepted the new technologies for faster development and growth due to the global competition. The present research article throws light on the usefulness of Multimedia technology in universities, colleges, schools, educational institutions and even corporate training centres. It also deals with advantages of web-based teaching and instructional strategy in distance education.

Keywords: Multimedia technology and web-based teaching/learning

Introduction
New technologies like web-based PCs, Mobile phones, Satellites and Wireless technologies, and Internet etc. are helping the teachers and the students to gather and spread information which is normally not possible by any other way. Unlike the previous society the present information society has accepted the new technologies for faster development and growth due to the global competition. Today higher education is considered as an important form of investment in human resources development. Youth with high end scientific and technological Specializations is considered the first-rate human capital for economic growth of the nation and proved as the new engine of the world economy. The goal of media is to communicate. Media communication is both an art and a science. Multimedia technology supports communication and interaction that transcends traditional language-based and cultural-based communication forms because of multi-media communicates to multi senses. So, several universities, colleges, schools, educational institutions and even corporate training centres are increasingly utilising the distributed networks and multimedia to supplement or enhance classroom instruction and to provide open / distance learning.

Demand for Higher Education and ICT After independence India has made great strides in the growth and development of education. The successive Education Commissions piloted by Radhakrishnan, Kothari and other eminent educationists had thrown open education to all sections of our society i.e., rich and poor, men and women, rural and urban, backward and weakest of the weaker Sections. There has been an impressive growth of colleges from about 700 to 20, 700, Universities from 25 to 435 and student enrolment from one lakh to 116 crore. However, literacy rate today is 52% only, out of which 77% people are in urban areas and 23% are in rural areas. Further, only about 10% of the population in the relevant age-group is enrolled in higher education and a mere five per cent graduate with degrees.

Instructional Methods
A flexible instructional system is the most important innovation introduced in the Open University System. Since most of the Open University students are likely to be employees and housewives, and are scattered over a wide area including the interior and remote villages, they may find it inconvenient to be physically present in a classroom for lectures at stipulated time and place. These inherent limitations make it imperative to explore alternatives and exploit the modern communication technologies for the advantage of the distant learner. The IGNOU adopted an integrated media approach, in the form of print materials, broadcasting and audio-visual aids, supported by tutorial system, contact classes, summer - schools and other methods. While print materials will be provided for all courses, use of other communication media-radio, television, audio and video will depend on circumstances and the nature of the courses. Today, radio is within the reach of most of the people, but other means such as video and audio players and television sets are scarce. Such equipment is installed at the Study Centres. While television broadcast has the advantage of the coverage, its time may be inconvenient to the viewer.

Use of Multimedia for Distance Education
In traditional teaching, the teacher selects a body of knowledge, organises it into a single course package and transmits that to students in one-way (mostly) flow of communication in the form of lecture to students. The students in this model are...
Designing Multimedia Courseware for DE

Designing a good MMCW require total commitment in terms of time and resources. Most crucial decision in the design is selecting appropriate Multimedia authoring tool for the development of a OHP and screen colour slides, slide projector and screen, computer, LCD projector and screen, computer and Internet connection. An Authoring system is software that helps the developers in designing an interactive courseware or application or presentation more easily than with conventional languages. Once authoring tool is purchased and time is spent in learning that, it will become very difficult to change to another, if all does not perform quite well or flexible as expected. So, one should be careful in selecting the authoring tool. For instructional courseware design, Multimedia is the latest and best tool that allows the designers in integrating text, graphics, animation, Sound and video information (real time). If the designers provide control over the information presented on screen, the resulting Courseware becomes interactive Multimedia. Normally Multimedia does not become interactive, however, adding hypertext links to that makes the presentation interactive, interesting and meaningful.

Web-Based Teaching /Learning

According to researcher during the past two decades, telecommunication technologies combined with web-enabled technologies have created a new technology-based focus called web- based teaching and learning. This new area has modified the concept of education around the world, creating new challenges and opportunities provided by new technology-based concept. Web- based teaching technology can be utilised to enhance the teaching and learning environment. There is little doubt that the World Wide Web is the most successful educational tool to have appeared in a long time. It merges and mixes text, audio, and video, with interaction within participants. It can be used globally and is platform independent while largely as successive medium, it can also be used for simultaneous events. It is not surprising, therefore, the trainers, distance education provides and teaching institutions at all levels are increasingly using the web as a medium for delivery.

One way of using the Web for supporting teaching and learning is to simply transfer aspects of one’s normal practice as a teacher onto the medium of the Web. For example, at the most basic level course content such as course notes, lecture notes and administrative detail can simply be posted on the Web, and at a more complex level, relevant Web-based resources can be linked to course notes and lecture notes to form interactive learning materials.

Advantages and Disadvantages of Web - Based Teaching / Learning

Advantages

WBT courses provide students with access to resources and expertise outside their own institution. No space or time restrictions are present in a virtual course, Web - based materials are easily distributed across multiple platforms, which can be accessed by Apple Macs or IBMPCs. The technology is relatively easy to use. Sources are available across the entire Web. Web-based materials are easy to update, providing student access to current information. The Web provides a student-centered learning environment. And a variety of learning opportunities can be provided to accommodate learning style differences.

WBT is a powerful solution to many of the issues that confront teachers in secondary and higher education such as the need to innovate in course delivery and to accommodate increasing number of students, sometimes at physically distant sites, without an associated increase in resources. Online, interactive WBT delivered via the World Wide Web (WWW), is an active open learning resource that has many benefits over pre-composed, fixed platform CAL packages. Besides being of advantage to students, such systems also provide powerful and flexible tools for course administration. Web - based type of courseware has many advantages, those including:

- They are available outside normal class hours with limitations only by necessary security arrangements. They are also available to students anywhere on any computer platform.
- They allow self-administered learning/revision/assessment and students can learn at their own pace, with no direct teacher involvement.
- They provide visual images which are important elements in many subject areas. The visual images are a mix of diagrams, full colour images and text, with interaction by means of hypertext indicators.
- They allow selectivity. Hypertext enables individual students to either concentrate on a particular topic or browse more widely through the subject.
- Last but not least, they allow adaptability. Unlike costly CD-ROM materials, which are platform restricted and likely to become out of date, in web-based courseware new CAL material can be easily comprised and present materials can be updated.

Disadvantages

Trends may focus on the technology instead of the content. Web-based course materials may be time consuming for teachers to develop. Teachers must change their mind sets and accept a new teaching paradigm, that is from teaching to
facilitating and managing learning rather than disseminating of information. Some students are technophobic just like some teachers. The active learning required by Web based course activities may be difficult for students conditioned by prior courses to be passive. Copyright infringements may be easier to commit on the Web and are for sure more public. Students without Web access are excluded. The financial cost incurred to access the Internet and to use the computer could be very high and it varies from institution to institution and from individual to individual.

Impact of Web-Based Teaching
With Web-Based Teaching, course materials for traditional classroom courses can be delivered on the Web. These materials can be updated frequently and can be even interactive. As of the course material is always available, there is no more a need for students to continuously take notes in class. Students who are shy to speak up in class can use the Web technology to foster better dialogue with their teachers by asking questions related to the subject taught through the e-mail, discussion group, listserve, etc. The privacy and individual attention gave by a computer can relieve some students out of the shame of giving an incorrect answer publicly or of becoming more slowly through lessons than other classmates. The simple act of making the learners aware of the learning objectives, including the criteria for evaluation and the conditions under which they will be evaluated, helps them develop confidence. WBT courseware can free teacher time from some classroom tasks so that a teacher can devote more time to individual students. Conducting a class with WBT can free-up some of the teacher’s curriculum time for developing more Web-based courseware. The Web can also provide information resources that are very current and that might otherwise be difficult to find. Teachers and students can communicate via the Web with other students, teachers and experts in a particular field online conferencing, listserve, e-mail, newsgroups and chat rooms. Students and teachers alike will need to develop skills that will enable them to effectively wade through all of the possibilities to find which is most relevant and determine its quality. Here are a few examples of how the unlimited information can be accessed to enhance Student’s learning experiences:

- Monitor current events through online newspapers and magazines. The Web allows students and teachers to get up-to-the-minute information on critical news stories from a variety of sources. Besides, students can also access and read what their local newspapers have to say about some current event and immediately compare that with what is being written by the national news organisations and those from countries around the world.

- Finding information on what to teach and how to teach is now easy. Databases of teaching methods, instructional strategies, and lesson plans are now readily available and accessible on the Web to give ideas to both new and experienced teachers.

Web Authoring Tools for Developing Instructional Materials and their Strengths and Weaknesses
Today’s Web authoring tools can give anyone, from an experienced coder to a relative novice, the power to build an interactive, animated, state-of-the-art Web site suitable for anything from a personal Web page to a midsize business site. An authoring tool is software that lets us create CAL courseware without the need for high-level programming. There are many authoring tools available and it may be difficult to know which one to choose. Some are expensive, so it is important to choose carefully to avoid a costly mistake. Important tools are classified into three categories as low-end, medium-end and high-end authoring tools are listed below under each category.

Low-end Authoring tools
A low-end authoring tool contains only the basic features that are necessary for creating Web pages.

- Adobe Page Mill
- Altrax The Web Publisher
- Drumbeat
- Net Objects Fusion
- Homesi Hot Dog Professional
- Hot Metal PRO
- HTML Assistant Pro
- Hyper Studio
- Microsoft FrontPage Editor 2000

Medium - end Authoring tool
A medium end authoring tool contains some advanced features (not available in the low-end authoring tool) for creating multimedia content in Web pages, e.g., Macromedia Authorware Professional.

High-end Authoring tools
High end authoring tool is more efficient than the low and medium end authoring tools. It has more sophisticated features for creating Web-based courseware and e-learning environment. Some of these high-end tools have been developed using the low-end tool (e.g. FrontPage) to be integrated into their Web authoring tools (e.g. Blackboard).

- Dreamweaver 4
- Tool Book II Instructor
- Director
- Blackboard 5
- Course Buildr Conclusion

With the emergence of relatively cheap multimedia delivery systems, many universities in developed and developing counties started their distance education programs.

Multimedia Technology provides major benefits Over Conventional teaching for the distributed Meaning:
- Less Instructional cost and reaching more students in less time,
- Provides effective institution learning.
- Multimedia Course Ware prepared by a single Source can be utilised by many users,
- Large number and geographically diverse population can participate in the distributed learning
- Lower cost of Instruction,
- Improved learning,
- Anybody can access these instructional materials from any place and time,
- Universities, business houses, hospitals transport, government offices, etc., to train or educate,
- Encryption provides the security to authorised learners and protects data,

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