Integrating Multimedia With Education And On-Line Distance Learning

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Introduction

The education sector is a major industry with political, social and economic importance which is characterized by the delivery of a service that is a highly individual and personal experience. Multimedia could bring significant changes in education from the individual sphere to the most general socio-economic structures. However, as much as multimedia is important to education, the education sector is strategic for the overall development of multimedia. Many key technologies and users are being pioneered in education. The sector is a major source of demand for multimedia materials of various sorts.

Multimedia is a concept that emerged in 1950's and commonly referred to a method that combined at least two media formats such as text and video or audio at one time to drive a more complete effect. Throughout 1980's and 1990's, the concept of multimedia took on a new meaning, as the capabilities of satellite, computers, audio and video converged to create new media with enormous potential. Multimedia literary is a growing. Concern among educators as society continues to depend on image technologies such as television, video and film. Educators need to prepare children to live and function in a society that relies on multimedia for information storage and dissemination.

Multimedia is a term frequently heard and discussed among educational technologists today. Unless clearly defined, the term can alternatively 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 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 an existing combination of computer hardware and software that allows everyone to integrate video, animation, audio, graphics and text resources to develop effective presentations on an affordable desktop computer”

Multimedia certainly has the potential to extend the type and amount of information available to learners. It is a powerful tool for making presentation. Multimedia offers unique advantages in the field of education. For instance, text alone simply does not allow students to get a "feel" to any of Shakespeare's play. In teaching biology, an instructor cannot make a killer whole come alive in classroom. Multimedia enables us to provide a way by which learners can experience their subject in a vicarious manner. The key to provide this experience is having simultaneous graphic video and audio rather than in a sequential manner. The appeal of multimedia learning is best illustrated by the popularity of the video games currently available in the market.

Multimedia can provide an enhanced or segmented learning experience at a low cost per unit. It is here that the power of multimedia can be unleashed to provide long term benefits to all. Technology does not necessarily drive education. That role belongs to the learning needs of students with
multimedia, the process of learning can become more goal oriented, more participatory, flexible in time and space, unaffected by distances and tailored to individuals learning styles and increase collaboration between teachers and students.

As stated above the internet technologies are changing our levels and our educational systems (Sheybani & Javini, 2004). Distance education has emerged as a new system to meet the new demands of education. It aims to democratize education which is the need of the hour of the developing countries. In distance education also multimedia is playing a significant role. In developing countries, it started like many other countries did with correspondence courses where printed learning material used to be dispatched to the students at regular intervals. With the development of computer industry and internet network, during the last three decades, things have changed and global communication has reached an unprecedented height. With these developments immense scope have come to the surface to impact "learning in an interactive way. Multimedia technology and internet networks have changed the whole philosophy of learning and distance education and provided us with the opportunity for close interaction between teachers and learners with improved standard of learning material. Multimedia use in online distance education may include any additional material utilized with in a course and includes linked text documents simultaneous linked video games and music (Poster, 2004).

Need of Multimedia in Education

Many studies were conducted to support multimedia use in education. According to these studies when multimedia is used in a constructive and cooperative learning environment, students learn more and retain their knowledge better.

"Multimedia can stimulate more than one sense at a time and in doing so, may be more attention getting and attention holding"

A study conducted by Okolo and Ferretti (1998) showed that students composition representing ideas simultaneously through text and audio, video and sound increased the likelihood that students will acquire an understanding of complex information. Multimedia can produce an enhanced and augmented learning experience a low cost per unit. The power of multimedia can be unleashed to provide long term benefits to all. It enables learning through exploration, discovery and experience.

The ongoing developments in computer and tele-communication technologies occasion tremendous changes in the activities of the distance education institutions in administrative procedures, instructional delivery and other functions. Central to the concept of distance education is the separation of teacher from the learner. This separation required that communication between instructor and student takes place in some way other than by direct speech. It therefore appears to be an ideal channel of communication as it used various interconnecting media-technical or otherwise to unite the teacher and the learner and to convey the content of the course.

Currently, many business and educational institutions are adding distance learning to their framing and educational curriculum (Blake, Gibson, Blackwell, 2006). One time learning systems can respond to competitive pressures quickly, with a saving in time required for travel and to print instructional materials. When multimedia is combined with distance learning through the Internet, it provides the use of technological tool that create more even variety in learning strategies without a teacher present.
The Impact of Multimedia use in Online Distance Learning

Multimedia use in online distance learning impact students and educators. No doubt whenever a technology continues to evolve research shows positive and negative impact (Sheykani et al: 2004).

If we look at the benefits, a common theory is that learners process information in different ways; a multisensory system may be effective in making information accessible to more learners. (Heinich et al: 1996). In some cases, students with learning disabilities who use multimedia may substantially improve learning in a multimedia environment as compared to using material that are text based only (McFarland, 1996). Non-interactive text based class room materials may be presented in more effective and interactive ways by utilizing auditory or visual media tools and techniques; this may help students learn faster.

Another benefit of multimedia use is that it provides students many more options about how they choose to learn (Sheybani et al; 2004) Multimedia can be implemented in a systematic way, used repeatedly and changed easily and quickly as needed. This creates a saving on redevelopment of online material. According to Tiene, Implementation of multimedia allows students to see how something works, especially through animation. Through the interactive functionality students can give feedback Audio is especially helpful for music and language learning implementation.

The use of multimedia can improve the online experience and improve the ability to learn and retain information. As the combination of visual with words has the effect of improving learning (Mayer 2003) In another study Lowe 2003 discusses the use of animations in educational materials and whether these effects are helpful in achieving desired instructional outcomes. Multimedia use in online distance learning can contribute to create a student centered learning environment.

Current research and experience are that multimedia facilities and packages can improve learning times and retention considerably over many traditional approaches, and a great many experiments and evaluations of use of IT in all domains of education have conclusive results. There is certainly a great deal of anecdotal evidence that multimedia works “It’s much quicker using IT, so you get more done. With practice, pupils will be able to take their work much faster than they ever would manually.” Networked multimedia offers even more opportunities to facilitate or enhance learning - access to remote information sources of many types, to remote tutors and virtual learning groups.

Multimedia not only impinges on individual learning, but also on the many functions of the education sector: teaching, development of teaching materials and pedagogies, teacher training, assessment of students and accreditation of course material. The education sector also has administrative needs, and teachers and establishments have to promote their services. Finally it affects the supporting service industry and other complementary sectors.

Multimedia may improve the existing institutions of learning, but may also lead to a change in the quality, experience and accessibility of education. Active organizational, political and economic pressures within education are likely to mean that some functions and institutions will change radically, and new ones merge, but equally some technical possibilities may remain unexplored.

So far multimedia has been considered as a tool for changing functions of the education sector,
but it also has an external aspect. Education prepares people for the 'outside' world, which is likely to be heavily affected by multimedia. The education sector will have to respond to the challenge of how to prepare people for an increasingly multimedia world, and learn to cope with the attitudes and skills that teachers and learners bring from 'outside'.

**Limitations of use of Multimedia**

No doubt, multimedia is contributing much more in learning and online distance learning, but there are few negative considerations involved in using multimedia for educational purposes. The basic limitation or disadvantage of multimedia is financial expenses involved in setting up and maintaining a multimedia. Development costs in multimedia are very high and the process of development of effective multimedia takes time. Time spent on developing multimedia packages require money so that the true cost of an interactive programme mounts with each delay. In case of online distance learning for providing standardized material to students, teachers need support of technical experts and programmers. All these result in increasing costs.

Use of multimedia puts pressure on instructors to provide increasingly more interactive materials because many learners expect that interactive multimedia information will be provided in an online course (Porter, 2005).

Multimedia requires high-end computer systems, sound, image animation and especially video, constitute large amounts of data, which slow down, or may not even fit in a low-end computers. Multimedia packages require high-end or good quality computers. A major disadvantage of writing multimedia courseware is that it may not be accessible to a large section of its intended users if they do not have access to multimedia capable machines. Because of this, courseware developers should think very carefully about the type of multimedia elements that need to be incorporated.

There is an issue of copyright or fair use standards for educational purposes (Jiene, 2002). Copyright may be considered differently if materials are published on line. In these cases, permission of the author of the copyrighted material may be needed and the difficulty of this process may eliminate use of this material.

The use of technology in developing countries such as India is not widespread. Several reasons account for this. Firstly, technological development in developing or third World Countries is not as advanced as it is in the developed world. Secondly, the infrastructure to support the deployment of technology is not always readily available or reliable. Thirdly, although costs are lessening, the capital costs to provide the necessary infrastructure, at the national level, is often beyond the economic capabilities of many of these countries. Fourthly, while the cost of individual equipment is getting lower, for many Third World people the ability to purchase such equipment is beyond their financial means. And fifthly, not all Third World countries possess the cadre of trained personnel which are required to optimise the presentation of information in electronic formats. Despite these recognized difficulties, many Third World countries are making concerted efforts to use IT, especially where it can enhance the delivery of distance education.
The Elements of Multimedia in Education

It is very tempting to use the latest computer wizardry to represent information and develop computer enhanced learning materials. However, the instructional design of these systems should be based on a careful examination and analysis of the many factors, both human and technical, relating to visual learning, when is sound more meaningful than a picture? How much text is too much? Does the graphic overwhelm the screen? For a student, this allows them to test all of their skills gained in every subject area. Students must be able to select appropriate multimedia tools and apply them to the learning task within the learning environment in order for effective learning to take place.

As mentioned earlier, multimedia learning integrates five types of media to provide flexibility in expressing the creativity of students and in exchanging ideas such as text, sound, video, animation and graphics. Some of the multimedia learning opportunities offered online are:

1. **Chat Rooms**: As the face to face discussion alternative, chat rooms can be useful place to hear different viewpoints, share knowledge and receive clarifications for questions.
2. **Collaborative Projects**: New web applications make it easy for multiple students to work together on an online project such as an essay or a visual.
3. **E-mail**: Email accounts make it easy for peers and professors to contact anybody, even it that is not online.
4. **Message Boards**: Message boards allow students to create thought-out responses to discussion questions. As the discussion threads are generally saved message boards become a resource when studying for exams and writing papers.
5. **Podcasting**: Podcast lectures let the student listen to your professor at anytime and any location. Students don't have to worry about missing an important detail because can listen to podcasts as many times 'they want.
6. **Videos**: Watching a video lecture makes it possible to see and hear the professor, as though they were attending a lecture in real life. Unlike podcasts, video lectures allow students to view demonstrations and pick up on visual cues.
7. **Web Conferencing**: Web conferencing allows students to talk with their professor in real time. Web conferences vary, but often students are able to see their professor (or conference presenter) on the screen and chat using headsets.

Future Trends of Multimedia

The future of multimedia technology is guided by how its use evolves. Predictions about future use of multimedia cover the range of complete success to uncertainty. The success of online distance learning in General will determine the possibility of success for multimedia as part of it. Administrators are not yet certain whether multimedia use will be a cost-effective investment or not. Some insist that according to research, It has not been adequately shown that multimedia adds value to educational" experience [Ells, et al., 2001] There is also a resistance to change among educators. Online technology advances are becoming so pervasive that teachers and trainers must prepare for it. Education will become more accessible, more convenient and will be reflected in learning environments (Jalobeanee) It is probable that information technologies will continue to become more advanced. The role of teachers will change, as they will need to
learn many things, including how to redesign the curricula for online use (Jolobeanu). Instructors will have to continue to increase their workloads. Students have come to expect multimedia; instructional designers and teachers will have to make the extra effort to keep online learning interesting.

Conclusion

In conclusion it can be said that the teaching and learning process has been greatly influenced by a variety of technological, instructional and pedagogical developments in the present time (Bonk & Ling 1998:). Distance education is one such technological revolution that combines the use of new communication technologies to reach out to larger segments of the population. A positive attitudinal change is required among both the learners and educators. The literature reviewed also indicated that research has not always confirmed the greater value of multimedia. More comprehensive studies should be undertaken to provide useful data on the successful utilization of present and future technologies into variable levels of education. If the demand for flexible online education grows, then multimedia use will grow also. New sources of education and training with integral multimedia components are appearing on line every day. Most importantly if multimedia use in distance learning is to succeed "an instructional designer has the primary responsibility of making sure that on line program accomplishes the learning goal. (Dempsey, et. al. 2002, p.288). The instructional designer must ensure that all the uses of media are reviewed, revised and finally integrated into sound instructional design and development, otherwise the learning objectives are not met. The addition of multimedia to on line distance learning can then provide unique and worthwhile feature to learner as the future unfolds.
References:


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