

COMPUTER BASED MULTI MEDIA PRESENTAION

- An Emerging Instructional System for Technical Education -

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ABSTRACT

Computer Based Multi Media Presentation, as a means for disseminating information has become very common in the industry and commercial world. It has become an essential feature of industry/modern trade fare. The Multi Media Presentation Technology is the result of convergence of a variety of brief technologies based on computer, video, and audio engineering and imaging technologies. The basic infrastructure in terms of hardware, software human-ware and use-ware is available in technical education system. It is getting reinforced with time.

It is time for the policy makers and managers of the policy makers and managers of technical education system to get acquainted with the potentials and possibilities of MMP packages, its implications and applications to enhance the quality of the graduates and technicians coming out of technical education system.

1.0 RATIONALE :

Research and Development during last few decades have rendered to the society a number of technologies which assure effective and efficient communication. Simultaneous developments of infrastructural facilities in technical institutes, in conjunction with shift in focus to assuring high quality passouts, the technical education system is ready to venture into cost effective hi-tech instructional systems and resources. Computer based Multi Media Presentation

packages recorded on Compact discs (CD) provides an instructional systems which has latent potential to ensure high quality of learning by students. This system has already been adapted by the industry and commerce and it is popularly termed as Computer Based Training or CBT. The computer based Multi-Media Package (MMP) is an emerging instructional system. Naturally, being new technology the cost of development of the package shall be slightly on

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higher side. However its suitability to both self learning and learning in small groups, transforms the MMP system in to a cost-effective and academically viable option for technical education system.

2.0 THE MMP CONCEPT :

The Multi Media package uses a variety of media for presenting information and events such as Text, diagrams, photographs, animations, video clips as visual elements on computer screen, and commentary, local effects and music as audio elements on speakers connected to the CPU. The multi-media PC is about 25% more expensive than a standard PC. The viewer/learner controls the flow and pace of presentation, the computer asks questions and provides answers. The image of computer screen can also be projected on larger screens ensuring visibility by medium and large groups of viewers. However a 17" size colour SVGA monitor is good for a group of 6 to 8 viewers.

The possibility of using the most appropriate communication media-combinations; empowerment of learner (s) / viewer (s) to control the content, pace and interaction; power of computer to compute and keep records of interactions and assessment of a large number of learners, make the multimedia packages a very high potential instructional system particularly for competency based technical education. Competency based technical education insists on demonstrating a complex combinations of intellectual, manual, managerial and social skills by the students.

3.0 THE DEVELOPMENTAL PROCESS :

Multi-Media Packages similar to all other learning resources should be developed on topics which are relevant to the curricula of technical education system in consultation with users. Technology experts should be drawn both from institutions and industries to join the design and development project teams identified for each MMP. During the research phase both conventional and the state-of-the-art technologies pertaining to the subject area should be explored and adapted into the contents of the MMP. Competent instructional designers and media designers will transform the contents into audio visual presentation elements, using hi-tech computer work - stations. The elements are ultimately integrated by a team of computer programmers and education technologists. The package should be tested on sample viewers and then appropriately be modified based on the feedback from testing. The final modified package is recorded and distributed on compact discs (CDs). In near future such MM Package will be published on INTERNET.

4.0 USER PROCESSES :

4.1 Individualized Learning :

MMP performs like all untiring personal tutor and keeps the learner engaged in the learning processes as an individual or a member of a small group. The learner can choose subtopics and concepts and sequences of the selected subtopics to suit his learning needs. The learner constantly interacts

with the computer and learns the concept and principles in small steps, at a learning pace suiting his capabilities. The programme of the presentation is capable of keeping record of interaction and progress of each individual learners. Based on this record keeping computer provides feedback to the learner regarding his learning difficulties. This record provides valuable information to the training manager/teacher pertaining to the effectiveness of learning strategies so that the design of future MMPs can be modified accordingly. Thus with the help of MMPs individualized mode of instruction can very easily be effected. This learning mode is effective for the learners of all age groups with varying from experienced executives / scholars to semiskilled operators / fresh students. If desired choice of communication language can be built in to suit the need for learning in multiple regional languages of the target viewers.

4.2 Group Presentation :

Multi Media Presentation when projected on a big screen and with adequate sound labels through PA system, becomes a very suitable aid for information presentation to large groups. This mode can also be used for small group presentation with limited interactions with the viewers through an expert presenter / teacher. This small group presentation mode involving about 10 to 20 learners, has a great potential for technical education system.

Necessary hardware is partially available in the user institutes. Further, it can easily be upgraded to suit the needs of any one of the above mentioned modes.

4.3 Multi Media on INTERNET :

Institutions of higher technical education like IITs, Regional Engineering Colleges, and selected state engineering colleges and polytechnics are planning to have 64 kbps access to internet for Multi Media reception and transmission. This mode has a great potential to distance mode of learning in technological and management subject (s) / topic (s) using MM Packages developed by a variety of MMP producers. Department of Electronics has already started promoting use of the ERNET and access to INTERNET in technical institutions and universities.

5.0 MM PACKAGE PRODUCTION PARTNERS :

MM Package development and production is a high resource and a large fund consuming enterprise. It needs a variety of inputs both intellectual and physical, a variety of human expertise, sophisticated high specification computer work stations and audio-video signal recording / processing systems. A number of analogue and digital technologies converge and kept applied to Multi Media Package on computer disc. A single private institution or Govt. aided organization can not afford to have all sophisticated human and physical resources. A number of agencies / institutes / organizations need to share their expertise and resources in order to design, develop and produce a Multi Media Package of Nationally acceptable quality. It is because of this simple reason, the design / development cost of a master CD is quite high as compared to

a perceived cost by any conventional technical education executive / manager.

A number of partners should join their heads, hands and hearts to concretise project of MM Packages to facilitate in improving the total professional quality of the passouts of technical institutes.

5.1 Partners' Group One : Faculty Members

Experienced and qualified faculty members with affection and concern for their students are the primary partners. Their felt needs for MMPs and urge to honestly promote use of available resources and MMPs for facilitating learning in students will be the primary inputs to this endeavour. The developer and user institutions should motivate willing faculty members to join the MMP producing projects.

5.2 Partners' Group Two : Designers - Visual/ Audio Elements & Programmer

Designer faculty members, artists and a variety of media technicians are required. The designer faculty members should prepare-visualize the potential visual elements and audio elements , in consonance with the needs of instructional design and human learning principles.

The visual design artists/technicians will transform abstract ideas into Text, Diagrams, Photographs, animation and Video sequences. The audio artists technicians will record commentary and process music and local sounds. Com-

puter programmer in conjunction with educational technologists will integrate all the instructional events, audio and visual elements into one instructional experience / package commensurate with the requirements of given target learners. Another computer technicians will prepare a first draft CD for "Field Testing".

5.3 The Partners' Group Three : Field Testers and Users

The group will comprise of a well trained teachers / faculty members in evaluating the quality of first draft CD on the basis of the following criteria.

- Effective learning in consonance with the intended objectives, in self learning mode.
- Effective communication through appropriate designed visual and audio elements, pace, flexibility and interactivity.
- Possibility of use of MMP for small group learning and presentations in class room situation for over viewing and introducing the package to a medium group of 40 students.

5.4 The Partners' Group Four : The Producers and Distributors

This group will have to take the maximum risk of financial loss and failures of a MMP. It should have a professional audio visual and computer software production facilities. It should also have an enterprising/ risk taking capability of producing a number of copies and recovered its investment through marketing.

5.5 Following Table Complies Locations of Various Partner Groups in Technical Education System :

S. No.	Group & Functions	Locations of Potential Groups
1.1	Group One : Faculty members with ideas and initiatives	IITs, RECs, State and Private Engg. Colleges and polytechnics
1.2	Group Three : Field testers and users	IITs, RECs, Engg. Colleges and TTTIs
2.0	Group Two : Designers - I	IITs, RECs, Engg. Colleges and TTTIs
3.1	Group Two : Designers - II	TTTIs, IITs and Industry
3.2	Group Four : Producers and Distributors	TTTIs and Marketing Agencies

6.0 THE COST OF MMP

The following cost estimates are based on author's experience in producing six MMPs during 1996 for industries under World Bank Assisted Projects.

It is expected that the MMP on an average will cost Rupees two to three lacs each. The number of copies which may be produced in the first batch shall be of the order of 250 to 300. Thus developmental cost of the package per CD would be about Rs. 1000.00 Keeping this in view of the cost of blank CD and duplication charges etc. it should be possible to distribute CD at an affordable cost of Rs. 1500 each to begin with. With increase in the popularity of MMP in different institutions, the distribution

cost may reduce to Rs. 1000 per CD in near future. If the duplication batch size is more than 1000, each CD shall cost less than the cost of a video programme.

7.0 CONCLUSION

The Computer Based Multi Media Presentation Technology offers an economically and academically viable emerging instructional system. It is very suitable to individualized learning as well as to small group learning. CBTs can be of great help in developing managerial, supervisory and experimental competencies in technical students. AICTE may think fit to hold a national consultation workshop for developing a national policy document.

