

E-Learning Training of Teachers

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Abstract: This paper contributes towards quality education to young school goers of primary and secondary education through their teachers by making them capable to contribute in the global information society and knowledge economics at affordable cost. It also provides teachers with skills to enable them to use ICT as a tool. For this primary and secondary teachers from rural India-core of education should be equipped with this technology eradicating fear from their minds about the new technology. As they will learn and become familiar with the environment, it will lead to more and more student to learn. This will captivate the community towards this programme. The complete courseware of this programme will be provided to the teacher in CBT/Web form Multimedia rich courseware for blended learning/teaching is assisted by classroom delivery also (lesser classroom delivery). The salient features are value addition and opportunity to learn new software packages concurrently with on-going studies and work. In this program we have trained 600 primary teachers from government school of Zilla Parishad.

Keywords: E-learning, Hypermedia, LMS, Primary and Secondary education, Teacher Training.

1. Introduction

E-learning inventions are rapidly becoming organizations response to continuous learning and change in the new economy because knowledge and training become rapidly obsolete. Just-in-time training becomes a basic survival need and identification of cost-effective ways of reaching a diverse global work-force becomes critical. Therefore a need is felt for making quality education at affordable cost for Indian people because education is social commitment of government, extending quality education to the remote parts of India to improve the literacy rate, making learning independent of location and seasonal hazards, effective utilization of recent technologies i.e. ICT and increasing innovativeness in thinking and approach of young Indians and enhancement in imagination power.

The use of different educational materials and techniques will give a full spectrum that aid better education. Studies have shown that the myth that teachers and students will get lonely at their computers is very wrong, whereas teachers and students sit together and discuss what appears on computer screen. It is of vital importance that students and especially students of teaching acquire knowledge and some experience from using hypermedia-An extension to hypertext providing multimedia facilities, such as those handling sound and video as a teaching aid^[1]. They need to know so much that they can make decisions of their own about what can be used in their teaching, and how it is done.

Since children in lower ages often come in contact with and use computers, teachers must be able to communicate about this. New teachers must also be able to take advantage of the

computer skills of young children.

2. A Course for Teachers as Student

Almost all teachers today are accustomed to the use of computers for word processing. But there are very few education sites where the students are taken beyond this point of computer usage by teachers. Although not all teachers need to know programming, computer graphics and hypermedia and so on, they should at least be given some insight into the possibilities available with computers today^{[1]-[5]}.

Teachers and especially students of teaching are one of the categories that might benefit greatly from grasping the mighty world of multimedia and hypermedia. At least it is almost our duty to give the students of teaching enough knowledge about the new methods and possibilities so they can build their own opinions. They must be able to understand and adapt to the way their pupils will be used to computers. NIELIT Aurangabad launched a programme for teachers which have the following emphasis: the curriculum is of 144 hrs divided into 24 hrs of theory, 60 hrs of project work and 60 hrs for practical. It concludes that great emphasis on practical and project work.

2.1 Goals

The course gives the teachers a broad knowledge about hypermedia and the possibilities today and in the near future. A "hands-on" feeling is developed so that they know that it is possible to create a hypermedia system without being computer experts. This course is studied full time during three weeks at NIELIT, Aurangabad by the teachers with more

practical exposure. The project gives an integrated insight in the complexity and the possibilities of a complete hypermedia system.

This goal is achieved by creation of content as project work by the teacher in the domain areas of the teachers teaching the corresponding subject using the syllabus though in the schools along with the hypermedia [2]. NIELIT Aurangabad has a repository of such content created by the primary school teachers.

2.2 Background information

E-learning refers to the systematic use of networked Information and Communications Technology (ICT) in teaching and learning. It can be said that emergence of e-learning is directly linked to the development of and access to information and communications technology (ICT) infrastructure. The E-learning makes use of various technologies to enhance or transform a learning process, educational value and reaching a larger and more diverse learner population with minimal expenditure. To make use of most of the opportunities that these technologies offers, foremost attention need to be paid to the pedagogy of the learning and teaching transactions. This include the changing nature of student learning from one of being "Teacher-directed" to being "Student-directed" or "Student-centered". It is therefore, obvious that the e-learning environment offer more flexibility as the electronic access provides variety of multimedia based material at doorstep of the learner at a time and a place suitable and convenient to the learner or of learner's choice.

The pedagogies i.e. Teaching Methodologies are shifted and refined with increase in learner's population and understanding the importance of quality of education/learning. Better avenues for education are created and recent technologies are being utilized to maintain the quality of education with the increase in student's/ Learner's population.

In view of above, E-learning is yet to be fully utilized to effectively integrate e-learning methodology and approach to the conventional classroom system to spread e-learning from teaching IT related subjects to other subjects of school curricula.

The NIELIT - An autonomous body has been supported by DIT, M/o, Communications and Information Technology, New Delhi to carry out training programmes on e-learning for the benefit of teachers from different regions. The project was implemented by NIELIT Centre, Aurangabad, (Maharashtra) for the benefit of teachers from western region. The main objective of the programme is to enhance the ability of In-service school, College & University teachers in using ICT as a tool, as a subject and as an educational resource. To meet this objective, a training program titled "Training of Teachers in e-learning" of 200 hours duration has been designed. Practical (80 Hrs) and Project work (80 Hrs) on content development in the respective area of specialization of the teachers has been emphasized to develop skills. Participants were provided with training kit containing course material, CD of utility software; so that they can continue post training lesson /content development [5]. The aim of the project was to propagate the knowledge on e-learning and its applications among teachers to integrate e-learning methodology and approach with conventional teaching and learning for

improvement in educational methodologies (pedagogies), with the following objectives.

1. To train 120 teachers for implementing e-learning in schools/ colleges/ institutes/ organizations in their respective areas by:
2. To introduce the fundamental of e-learning and hardware & software employed in e-learning.
3. To develop skills in teachers to locate & reuse the course content in e-learning.
4. To introduce tools and technology employed for content creation for implementing e-learning in education.

This is a case study / pilot project with our idea to take the teachers aware, search contents, use and reuse the available content. Hence this program infused following long term deliverables for NIELIT, Aurangabad and others around the region.

1. Extend quality education to the remote parts of the country.
2. Create multiplier effect to use ICT technologies and create awareness about the usage of information tools, blending it with traditional skills to enhance quality and productivity in education.
3. Offer a collaborative and exploratory learning environment.
4. Help institutes and departments in getting their own staff trained / retrained so as to launch new courses without recruiting the additional man-power thus overcoming the shortage of appropriate trained man-power.
5. Support in continuing education to the staff by updating the faculty skills.
6. First step in development of a Resource Centre having state-of-the-art facility.
7. E-learning facility for training and content development [5].

3. Course Content Covered

The education of teachers must be adapted to present technology. In this paper a course in Computer Aided Teaching is discussed and described. The contents of the course, its relation to other disciplines, and implications for the future are made. The valuable areas covered in this section helped the teachers to improve pedagogical skills. The curriculum is of 144 hrs divided into 24 hrs of theory, 60 hrs of project work and 60 hrs for practical. It concludes that great emphasis on practical and project work. The course includes hands on Adobe Photoshop. It covers image basics and introduction to various editing tool. Various navigation tool palette and layer basics. The PowerPoint allows making presentation inserting images, animation, video clips and audios. Flash is also learned by teachers for basics and animation and flash basics creating scene. They also learned inserting sound and optimizing animation for web. The Audio Editing Tool helps working with audio clips. Video editing allows working with windows movie maker. The training works on integrating content with Moodle. It allows installation and configuring Moodle and this allows using student interface and admin interface to make learning more interesting and interactive. The Story Boarding covers media integration and Multimedia Story Boarding. Introduction to authoring tools cover, captivate, designing and animating

objects and combining text movie sound and its effects. It also covers creating and administrating test question. An insight to learning management systems (LMS) was given so as to familiarize the teachers with a range of systems for managing, training and keeping educational records. An introductory insight was also provided for use of software for distributing online or blended/hybrid school/college courses over the Internet with features for online collaboration^{[3]-[4]}. The following activities were also addressed:

1. Student self-service (e.g., self-registration on instructor-led training)
2. Training workflow (e.g., user notification, manager approval, wait-list management)
3. The provision of on-line learning (e.g., computer-based training, read & understand)
4. On-line assessment, management of continuous professional education (CPE)
5. Collaborative learning (e.g., application sharing, discussion threads),
6. Training resource management (e.g., instructors, facilities, equipment)

4. Conclusion

Initially as an outcome of the project is that 720 (120+600) teachers from Primary & Secondary Schools, Art, Science, Polytechnic, Engineering Colleges and University from states of Maharashtra, Andhra Pradesh, Madhya Pradesh & Goa were trained in 9 batches, where in about 50% teachers are from Primary / Schools from rural area (Zilla Parishad Schools) and all the trainee teachers are from Govt. / Govt. aided Schools, Colleges only. After successful completion of project further 600 primary teachers were trained from Zilla Parishad schools. The trainee teachers developed e-content in their respective areas of specialization as a project work in subjects, i.e. Languages (Sanskrit, Urdu, Marathi, English etc.), Electronics, Maths, IT, Computer Graphics, Pharmacy, History, Agriculture, Political Science, Commerce. The trained teachers acting as Master Trainers for their parent institute. This program midway led to Organized "The comprehensive program for building e-Learning Institutions", conducted by Crystal-GTZ, Germany, held at NIELIT, Aurangabad. This led to a training in E-Environment & blended learning mechanism of computers in certain Zilla Parishad primary schools. Today's requirement is that teachers who graduate today, must be prepared for the school environment of tomorrow and better equipped to keep up with what happens in the knowledge industry for sharing and delivering to students. It is quite surprising that the teachers in such a short time, three weeks, can get enough experience to create content material using such a diversity of software and hardware tools. Almost every teacher attending the course was unable to use mouse and if they knew computers then it was "only" in the "word processing stage". There might be several reasons for the good result. Many of the applications can be used in an intuitive way. Another reason is presumably is the consistency between the applications and the content developed by them as a project work in the last week of the training. There are certain parts of the course that should be developed. It would be valuable if the projects developed by the teachers could be tested on a real class with full contents. The length of the course and the lack of computers in primary and secondary schools have so far made it difficult to do this.

The comments of the training teachers during the training and post training, a few of them are listed below. During the training process the Primary and Secondary school teachers were anxious and puzzled and opinioned the following:

1. The learner might find it uninteresting or monotonous as compared to black board teaching and paper pen test.
2. The teacher might find training difficult to administer if he she is not a computer savvy.
3. It faces certain constraints, like, power cut, when it is being administered.
4. The learner might not take it seriously as he / she is used to the traditional method.
5. The use of Computer Based Teaching requires many computers which may not be available in all the schools.
6. The learners who are not computer friendly might not feel at ease.
7. Certain technical problems might crop up which can distract the learner while learning.
8. All teachers may not be competent to develop Content.
9. Teacher may not know computer languages that may be used for developing Content.
10. Since teachers were from Zilla Parishad School the opinioned that deputing them was difficult because of official preoccupation, official leave and other regulatory constraints for training and promotion.

After the training because of the emphasis on projects done by the training teachers they could revisit themselves and created an atmosphere of enthusiasm and creativity in the projects developed by the teachers and at the end their feedback was:

1. They do not require any special setting or arrangement. The only requirement is computer systems and software.
2. The teacher and student can use it even from home if made available on school website.
3. They do not need any special assistance.
4. It saves time on the part of the teacher and students and more topics could be covered and discussed.
5. The feedback is given immediately, which gives an intrinsic reinforcement to the student.
6. The student finds it more interesting and motivating as compared to the black board teaching as 3-D and hypermedia methods can be adopted.
7. It can be updated from time to time.
8. It is economical in terms of money as it requires only one time investment.

There are other important issues that need to be further discussed in the course. The use of copyrighted material, sound, video, pictures and so on, is a vital question for all hypermedia systems. This discussion should be emphasized. Can teachers really get help in their work using computer technology? How would students benefit and take the advantage by E-Learning environment? It is clear that there is a need for this course and other courses related to this. With more development of this and other courses and the cooperation with teachers from other domains these courses can give the teachers and students many aspects related to the use of E-Learning environment, use of technology and development of content creation by technical teachers. In the future there will not be only a single course but hopefully a set of courses giving the students a much broader and deeper knowledge of this fascinating E-Learning Media with further

effective ways of training teachers in the use of E-Learning environment.

A study on this training programme has been done to develop a technology for "Fingerprint Authenticated E-Learning on Handheld Device".

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