

eLearning for Higher Studies Of India

**Dr. Shobana Nelasco M.A., (M.B.A.), M.Phil., Ph.D.,
Mr. A. Nilasco Arputharaj M.B.A., D.P.M., D.R.T.M., D.R.E., (Ph.D.)
and Er. G Alwinson Paul M.E.**

Fatima College (Autonomous), Madurai-18. Tamil nadu, India.

E-mail: s_nelas@yahoo.com

Abstract

In India, globalisation has generated a good vibration and life for higher education. The new era of technology enabled education or 'eLearning' is displacing the outdated traditional methods of learning. eLearning is also a broader term than 'on-line learning' and 'm-learning' The uniqueness of eLearning is that, it provides the learner the opportunity to learn anytime, anywhere. eLearning is the only method of learning, where three distinct learning styles of auditory learners, visual learners, and kinesthetic learners are incorporated. Advanced learners are allowed to speed through or bypass instruction that is redundant while novices slow their own progress through content, eliminating their own frustrations.

This paper concentrates in Indian higher education scenario, eLearning content preparation and presentation tools, application of eLearning in various types of methodologies used in higher studies, pros and cons of eLearning and future of eLearning in India. Since the Indian knowledge industry is entering into the take off stage, the strategy of survival of the fittest holds good. Few institutions like IITs join the race, while the rest suffer from lack of knowledge or from lack of realization of

the importance of eLearning. The IT service sector export of India is growing at a faster rate. This same speed of growth is not replicated in eLearning application. Technology enabled learning is evolved through a combination of hardware, software, media delivery system and communication systems including networking. eLearning benefits the society by offering integration of all institutions, access to best faculty and quality study material, avoidance of human bias, dust free learning, individualized instruction, learning in experience, unique fast learner - slow learner mechanism, flexibility, cost effectiveness, zero opportunity cost of time etc.

But the major challenge faced by eLearning is that it cannot replace human being. Hence, while designing eLearning packages, it is necessary to realize that the learners are not isolated with technology. According to IDC, the revenue earned worldwide from eLearning was \$6 billion in 2003. That's expected to rise to \$21 billion by 2008. NASSCOM reports that Indian companies will get revenues of \$7 million to \$9 million by the end of 2005. eLearning in India has a very big potential and a bright future. Since virtual classroom has got bright future, all technical higher educational departments should start preparing separate

virtual reality modules for each lesson. It is also suggested to attract affordable international students, to utilise the adventurous faculty collaborators, to bring about e-twinning of institutions and to plan more inter-country exchange programs. To conclude global exploration into any branch of knowledge is possible only through technology enabled learning.

The **objective** of this paper is

- To explore the scope for eLearning in Indian higher education scenario.
- To examine the eLearning content preparation and presentation tools
- To examine the application of eLearning in various types of methodologies used in India.
- To study about the benefits of eLearning.
- To explore the challenges that will be faced by eLearning in India.
- To study the future of eLearning and to examine the possible methods of new introductions.

Intended /actual contribution of the paper:

- To disseminate information regarding various eLearning tools and innovative methods of applications those are followed in India.
- To help the rest of the participants learn the various methods of eLearning.
- To insist on the importance of eLearning for Indian higher studies.
- To make the academicians realize the significance of eLearning so that they will start learning to promote the eLearning process.

‘An effective education in the 21st century must provide a harmonious balance between academic education and practical

skills development, including technical and vocational education.’ - UNESCO¹

The new era of globalized ‘one world’ has made it necessary to bring about an integrated methodology in teaching-learning environment. The movement of knowledge (technology) and knowledge workers across the countries fills the knowledge gap. Here Hecksler-Ohlin’s theory of comparative cost advantage of international trade becomes applicable in the knowledge trade. The countries which are in comparatively better knowledge are in a position to trade their ideas, till the rest of the countries are brought abreast of them. This can be called as comparative advantage theory of knowledge.

In India, globalisation has generated a good vibration and life for higher education. The new era of technology enabled education or ‘eLearning’ is displacing the outdated traditional methods of learnings. eLearning is also a broader term than ‘on-line learning’ or ‘online education’ which generally refers to purely web-based learning. In cases where mobile technologies are used, the term ‘m-learning’ is used.

The uniqueness of eLearning is that it provides the learner the opportunity to learn anytime, anywhere. eLearning is the only method of learning, where three distinct learning styles of auditory learners, visual learners, and kinesthetic learners are incorporated. And by using learning style tests, eLearning can locate and target individual learning preferences. eLearning is inclusive of a maximum range of learning styles, preferences, and needs. Advanced learners are allowed to speed through or bypass instruction that is redundant while novices slow their own progress through content, eliminating their own frustrations.

¹ www.portal.unesco.org/education/en/ev.php URL-ID 40848

Indian Higher Education Scenario

In India, the higher education has got both government and private players in the market. It consists of arts, science, management, technical and professional education. Since the Indian knowledge industry is entering into the take off stage, the strategy of survival of the fittest holds good. The foreign players are also trying to join the competition. And hence the less effective educational institutions are forced to merge themselves with others or they are forced to go out of market. Though the transition period is painful, the ultimate fruit will be surely in favour of both the knowledge sellers and buyers. If this system is well planned, students can reach the knowledge of remote and unreachable locations in every nook and corners of the world at no cost.

There exists a paradox in eLearning among various institutes. Few institutes join the race, while the rest suffer from lack of knowledge or from lack of realization of the importance of eLearning. Institutes like IITs are adopting all latest technologies and are keeping their students enlightened from various parts of the world. eLearning has vast potential in India. A major marketing and awareness effort will bring about the desirable change. UGC, NAAC, ICSSR, DBT, NCERT, ICHR, NEEPA, AICTE and other agencies of ISO 9000 family are pushing from various directions to bring the slow growers to walk with the rest. University Grants Commission provides eLearning programs like EDUSAT and INFONET.

The IT service sector export of India has grown up from US \$ 754 millions in 1995-95 to US \$ 12,000 millions in 2004-05. The annual growth based on the trend analysis is US \$ 573 in India and US \$ 1038 in Tamil Nadu. The Indian IT sector especially

Tamilnadu IT sector is growing at a faster rate. This same speed of growth is not replicated in eLearning application. If all these efforts, are directed properly the ups and downs in knowledge growth can be removed.

eLearning Content Preparation and Presentation Tools

Technology enabled learning is evolved through a combination of hardware, software, media delivery system and communication systems including networking.

Desktop, laptop or notepad, palmtop or hand held computers, electronic blackboard, electronic writing pads, mouse, trackball, joystick, light pens touch screen, optical mark / character recognition, bar code reader, digitising tablet or digitizers and a cursor (puck) or a pen(stylus), speech or voice input device, printers, scanners, copiers and faxes are some of the hardware devices.

Softwares includes voice recognition, hand writing recognition, information management programs, learning packages in removable disks and in hard disks, data base management and data processing softwares, information banks (dictionaries, encyclopaedias, almanac, references), digital books, educative games, programmes and languages, skill Training, self learning packages, edutainment (education and entertaining) softwares, presentations, word processors, spreadsheets, designers, audio and video animating and editing softwares.

Delivery systems includes audio and video conferencing aids, dishes and antennas for satellite communication, web cameras, digital video and still cameras, cell phones, speaker phones, telecommunication linkages, modem, server, LCD and/or D.L.P. Projectors.

Some communication services include, telegraph, dialog (telephony, video telephony, telemetry, teletex, telex, videotext, facsimile, video surveillance, Electronic Meeting Systems (audio, video, groupware, teleconferencing.), Retrieval (videotext, broad band), Messaging (voicemail, video mail, electronic mail), etc. Communication technologies are generally categorized as asynchronous or synchronous. Asynchronous activities use technologies such as electronic mail, blogs, wikis, and discussion boards. Synchronous activities occur in an online chat session or a virtual classroom or meeting.

Application of eLearning in Various Types of Methodologies used in Higher Studies

Multimedia is highly useful in Research, Teaching, and Learning. In research, review of related and earlier studies can be done through various search engines. Panel discussions, presentations by learners and teachers, submission of assignments, feedback from students, 360⁰ performance appraisal system for teachers, recording for future, workshops, multiple choice tests, guest lectures from distant university experts, case study, projects, remedial teaching, training the absentees, disseminating instructions, easy evaluation methods, on-line objective testing, student-created projects, experimentations, e-merging learning workshops etc are some of the easy tasks where eLearning can take place easily. 3D graphics are used for creating various models of science and maths. Hypermedia, interactive multimedia, multimedia presentations, virtual reality community, personal information management programs, departmental information management programs, documentation of teaching materials, etc will also enhance applications in higher educational system.

Benefits of eLearning

Integration: All institutions, research institutions, regulatory bodies, professionals, academicians and students can be integrated on regional, state, national and international level. Sharing of knowledge, experience, infrastructure and technology will enhance the effective and efficient utilization of available resources. Students can have an access to unlimited storehouse of information at any hour and from any place.

Access to best faculty and quality study material: Since eLearning has ability to cover distances, a few good teachers can be scaled up. Faculty availability is not restricted by geography or even time because of recorded classrooms. The expert teachers also will be identified and honoured by the demand for them from learners.

Human bias: eLearning helps removes the bias of sex, religion, colour, caste etc.

Dust free environment: Unlike in chalk and talk method, learning atmosphere becomes dust free.

Individualized instruction: eLearning also offers individualized instruction, which print media cannot provide. It makes learning exciting, engaging and compelling. Blended programmes can integrate eLearning with face-to-face workshops, coaching, action learning and a huge range of other learning methods to cover a range of needs, styles and approaches. Private messaging readily supports these exchanges while protecting the participants' privacy. Based on the individual and/or group needs, interests, career objectives and job profiles, lesson modules can be chosen.

Learning in experience: A Chinese proverb says, 'Tell me, and I'll forget. Show me, and I may remember. Involve me, and I'll

understand'. Difficult or dull subjects can be made more interesting, easier and more appealing by e learning. It is an active experience with the emphasis on interactivity and 'learning by doing'. Also, many studies have proved that absorption levels are at least 20% higher in eLearning compared to traditional learning. (www.gurukulaonline.com)

Fast learner - Slow learner mechanism:

Quality of output information can be adjusted to the required level and are flexible. eLearning emphasizes continuous learning and promotes "just-in-time" and "just enough" learning. Both slow and fast learners can take their own time of learning because they do need separate timings. And hence the overall stress in the classroom environment can be removed.

Flexible: On-demand availability enables them to remove stress. eLearning empowers you to take charge of your learning and to access online library resources. Since the playback of recorded sessions are possible, absentees can learn the lessons when they are back and the slow learners can listen for more than one time.

Cost effective for both students and organisation: eLearning makes the best knowledge products available at an affordable rate by cutting down the travel and extra living expenses. Overall cost for the organisation is also reduced (instructor's salaries, meeting room rentals, and student travel, lodging, meals, etc).

Zero opportunity cost of time: Since learning can be planned after regular working hours or on holidays or at home, the opportunity cost of the time spent on training is zero. Learning time is also reduced to an average of 40 to 60 percent, as found by Brandon Hall (Web-based Training Cookbook, 1997, p. 108).

Simulation, gaming and interactivity will enrich eLearning:

Research shows that student understanding and retention improves when they learn by experience. Technologies such as collaboration, interactivity, modelling, simulations, virtual reality interfaces and gaming will help students experience the skill while being taught. This will help the students in Albert Einstein's scientific method of learning. He says 'I do not teach my pupils. I provide conditions in which they can learn.' And hence eLearning is a wholesome learning.

Challenges To be faced by eLearning

eLearning is not, however, the be all and end all to every educational need, because computers cannot replace human being. The personal touch, face-to-face interaction, eye contact are some of the stimulating and motivating factors in the learning process. The impersonality, suppression of communication mechanisms such as body language, and elimination of peer-to-peer learning, reduced social and cultural interactions are major drawbacks associated with eLearning mechanism.

As per the collaborative learning theory, human interaction is a vital ingredient to learning. Hence, while designing eLearning packages, it is necessary to realize that the learners are not isolated with technology. Human interactions should be encouraged through audio or video-based web-conferencing programs and threaded discussion boards. Faculty-to-student as well as student-to-student interactions, should be encouraged in any form. Discussion groups can also be formed on-line. The usage of e-boards, chats, e-mail, and tele-conferencing, may helps remove this potential drawback to some extent.

Future of eLearning in India

According to IDC, the revenue earned worldwide from eLearning was \$6 billion in 2003. That's expected to rise to \$21 billion by 2008. Nasscom reports that Indian companies will get revenues of \$7 million to \$9 million by the end of 2005. eLearning in India has a very big potential and a bright future. At present many Indian students are going abroad for education with various demands. All those demands can be satisfied through commercial/ private players' entry into the knowledge market in future. Also in future there will be high demand for people who can develop multi-lingual courseware that addresses various topics.

In higher education, virtual classroom, a teacher free classroom has got bright future in India. A virtual classroom is one where the virtual reality is enhanced. It is a totally technology enabled class room environment. Virtual Reality (V.R.) is a 3D learning environment where the learner can explore the learning concept. Learning is experienced through games or simulated situation. It brings a real environment while wearing a headset and data glove in an immersive virtual reality environment. In the areas of Medicine, Engineering, Astronomy and other skill trainings, virtual eLearning will become indispensable. 2D and non-immersive virtual reality situations are available in many higher educational institutions in India. Since this type of eLearning brings out the joy of learning, every distant learning program should incorporate virtual classroom communication. All technical higher educational departments should prepare separate virtual reality modules for each lesson.

To conclude modernization of education in Indian colleges and universities is a necessary attempt. The syllabuses, subjects

and courses have to be planned in such a way that it satisfies the top international standards. To attract affordable international students, who are interested in comparatively quality education, eLearning has to be promoted. Infrastructures also have to be standardized so that it satisfies the basic needs of every student. On the technology support side we need adventurous faculty collaborators willing to share both their content expertise, and their experience as effective teachers and communicators. The knowledge resource from the best brains of various institutes, colleges and universities has to be used for bringing about a better society. E-twinning of institutions will help them to share their infrastructure and technical expertise. More inter-country exchange programs will help achieve the target. In brief, global exploration into any branch of knowledge is possible only through technology enabled learning. "Open up the doors – to as many people as possible to gain access to it, at whatever moments in their lives, however frequently they choose to knock upon this or that education door."

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