

The E-Learning Bandwagon: Politics, Policies and Pedagogy

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Introduction

The use of technology in education is not new. Particularly in the field of distance education, the use of technical media is an important component in the teaching and learning process. If we critically look at the most popular and cited definition of distance education propounded by Keegan (1990), it will be evident that the change from the 'correspondence education' to 'distance education' has been mostly due to the use of technical media in the teaching-learning process that provides opportunity for two-way communication, increased interactivity, and authentic learning. With the emergence of World Wide Web (WWW) in 1991, the world of teaching and learning has adopted it as one of its main innovations, often considered a panacea for problems of access and quality faced by educational systems.

E-learning has become popular amongst educationists because of its inherent strengths and advantages it provides to the instructional process. Some of these are (Goldberg, Salari & Swoboda, 1996; Starr, 1997; McCormack & Jones, 1998; Weller, 2000; Bates, 2001):

- Access to educational resources from outside the institution on a global and instant basis;
- Quick and easy way to create, update and revise course materials through low-cost off-the-shelf software;
- Increased and flexible interaction with student through e-mail and discussion forums;
- Location and time independent delivery of course materials such as course notes, diagrams, reading list, etc.;
- Ability to combine text, graphics and a limited amount of multimedia, enabling instructional designers to prepare quality learning materials;
- Interactive and dynamic learning experience through online assessment tools, simulations and animated learning objects;
- Platform independent delivery, accessible through any computer with a simple browser interface;
- Increased learner control through hypertext based presentation of information;
- Opportunities for international, cross-cultural and collaborative learning; and
- Ability to serve a large number of students at a potentially reduced cost.

Definitions of E-Learning

The field of e-learning is new and developing fast. The advantages are clearly laid down, and therefore, it is obvious for academic institutions around the world, including corporate private organizations to take plunge in the e-learning

bandwagon. However, the field is yet to mature and have its own theoretical basis (Michaelson, 2003; Nichols, 2003). There are many different connotations of e-learning, and individual researchers define the subject in their own context. To some, e-learning is electronic learning, and thus, covers learning through all electronic media including audio, video, radio, television, etc. For others, it is the use of computer, the Internet and the web. Some of the definitions of e-learning and its related terminologies are as follows:

Web-based Instruction: It is a “hypermedia based instructional programme which utilizes the attributes and resources of the World Wide Web to create a meaningful learning environment where learning is fostered and supported” (Khan, 1997).

Virtual Learning: “The educational process of learning over the Internet without having face-to-face contact is known as virtual learning’ (French, Hale, Johnson and Farr, 1999). However, for some virtual learning may also include tele-learning.

Online Learning: It is synonymous to web-based learning where learning is fostered via the WWW only, in an Intranet or Internet. Mishra (2001) calls it as the new generation in the evolutionary growth of open, flexible and distance learning.

E-Learning: “The term e-learning covers a wide set of applications and processes including computer-based learning, web-based learning, virtual classroom, and digital collaboration” (WR Hambrecht +Co, 2000, p. 8). However, the term e-learning is becoming widely accepted as a substitute for online learning and web-based learning.

Interestingly, the term e-learning is also written differently by different individuals. Some of the examples are: eLearning, e-learning, e-Learning, E-learning, E-Learning. Sharma and Mishra (2007) have provided a framework to define e-learning.

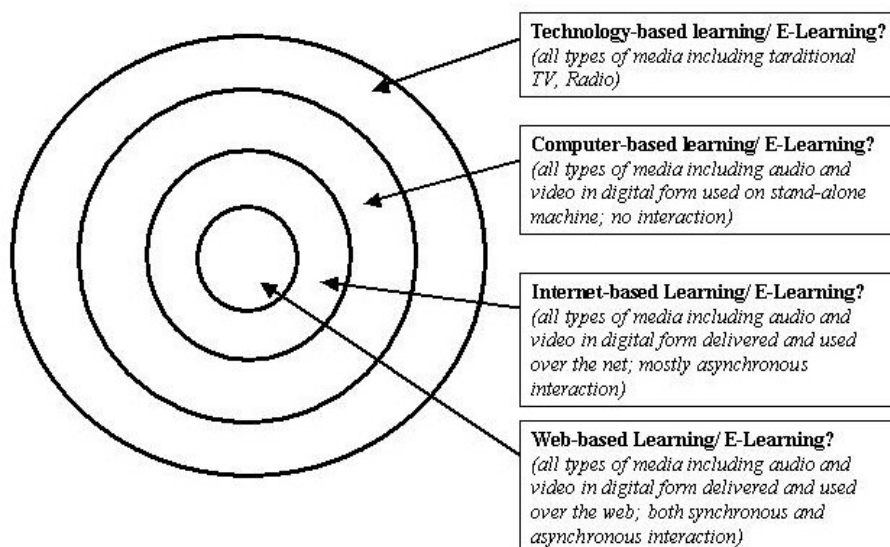


Figure 1: What is E-learning?
(Source: © Sharma & Mishra, 2007)

There is urgent need to standardize both nomenclature and definition of e-learning. Without, these it is difficult to have any framework for effective design, development, delivery and evaluation of e-learning programmes. My definition of e-learning is that teaching and learning systems which is the central core in figure 1.

The Bandwagon Premise

From the use of satellite in the early 1970s to the present interest in a dedicated satellite for education (EDUSAT), India has considered education as a primary force for development of the nation. India has a strong educational infrastructure, particularly in the higher education sector with more than 13, 500 colleges and above 250 universities (UGC, 2002). The developments related to e-learning should be seen in the context of socio-economic and ICT infrastructure of the country. India has progressed well in the IT sector primarily due to the IT training by the private sector. The country's first online educational enterprise also came with the private initiative, when the National Institute of Information Technology (NIIT Limited) started Netvarsity in 1996. Since then a large number of online 'teaching shops' are in operation primarily in the field of supporting school level education and for preparing students for competitive examinations like the medical and engineering entrance tests. However, National Association of Software and Services Companies (NASSCOM)'s Market Intelligence Service reported that the e-learning market in India is in an infant stage and in 2002 was approximately US\$4-5 million with an expected 4 year cumulative annual growth rate of 20-25% (NASSCOM, 2003).

E-Learning Developments

The real impetus for e-learning came from the National Task Force on Information Technology and Software Development constituted by the Prime Minister of India in 1998. The Task Force report presents the master plan that India has in place as a long term policy for capacity building of institutions, human resource development in IT related areas, and use of ICTs in education.

The Indira Gandhi National Open University (IGNOU) responded to the recommendations of the Task Force with its Virtual Campus Initiatives (VCI) in 1999. Since then a number of such initiatives (Table-1) are in operation in the country. The number here is not that important; what is important is the number of institutions that are considering the idea of going online or are being chased by private agencies/technology providers to start online operations. Based on my experience and research, I propose three premises that are probably responsible for the present interests, enthusiasm and the "bandwagon effect".

Table-1: Virtual Educational Institutions in India

Sl. No.	Name and URL	Areas Covered	Owned and managed by
1	Netvarsity http://www.netvarsity.com	IT related areas and soft skills	NIIT Online Learning Limited
2	Indira Gandhi National Open University http://www.ignou.ac.in	IT related areas and in Social Sciences	Part of the National Open University established by the Govt. of India
3	Yashwantrao Chavan Maharashtra Open University http://www.ycmou.com	Use e-learning as part of its distance learning strategy in technology courses	Part of YCMOU established by the Maharashtra State Government
4	Tamil Virtual University http://www.tamilvu.org	Tamil language, literature, and culture	Governed by the society established by the Government of Tamil Nadu
5	Punjab Technical University http://www.ptuonline.com	Engineering and Technology related courses	Established by the Govt of Punjab, the online venture is a collaborative effort with a trust
6	Birla Institute of Technology and Sciences http://vu.bits-pilani.ac.in	Engineering courses	Part of the BITS (Deemed University status accorded by the University grants Commission)
7	Institute of Management Technology http://www.imtonline.org	Courses in Management leading to eMBA	Managed by NPO, and the courses approved by AICTE
8	Symbiosis Centre for Distance Learning http://www.scdl.net	Courses in Management leading to PG Diploma	Managed by Symbiosis Society (NPO) and approved by AICTE
9	MedVarsity http://www.medvarsity.com	Continuing education programmes in Medical and health related topics	Managed by Medvarsity Online Limited, an unit of Apollo Hospitals
10	Indian Institute of Technology, Mumbai http://www.dep.iitb.ac.in	IT related courses at diploma and non-credit level	Institute of national importance, and the programmes are offered by the Kanwal Rekhi School of Information Technology
11	Indian Institute of Technology, Delhi http://www.iitd.ac.in/courses	Engineering courses	Ministry of Information Technology, Govt. of India supported courses

There are politics behind promotion of e-learning

Let's look at the telephone density, and Internet access that are crucial to e-learning development in India. As per the Human Development Report 2006, in 2004, there were 42 fixed line telephones per 1000 population, 44 mobiles per 1000 population and 32 Internet users per 1000 population (UNDP, 2006). While the mobile users are increasing at a rapid rate, the Internet user population is only 4.5% of the total

population (Fig. 2) in 2005. Another report place the Internet user population at 3.6% of the population (IMAI, 2006). In such a scenario, when we plan to develop e-learning programmes, it is only for those who have the access to the carrier technologies. There is a strong 'digital divide' that does not permit us to think about e-learning beyond launch of niche programmes targeted at specific groups of clientele. In spite of the poor level of access technologies, at many places, e-learning is pushed because of a variety of reasons, including the 'lone ranger' (Bates, 2000) enthusiasts amongst the academia. Governments too promote e-learning ventures without looking into its overall impact, as they consider it as their mandate to democratize higher education, and e-learning is the best possible way to reduce the state burden of opening more face-to-face institutions. There is also the politics of 'technology redundancy', and use of e-learning demands setting up of huge access centres, and thus purchase and continuous updating of technology. Though open source software could be the answer to the high cost of proprietary software, the cost of hardware is still a matter of concern for developing countries like India. The most cited Moore's law for 'transistors on chips', predicts that the power of computer doubles every 18 months. In other words, you can get a computer of X power in half its current price after 18 months, meaning your computer infrastructure gets outdated every 18 months and there is a tremendous scope for investments here. Yet, another politics is the notion that digitization of course contents into 're-usable learning objects' (RLO) would reduce the dependencies on teachers! But, politics is something that is very important for development of policy. Without political will, whether at the national level or at the institutional level, no good idea can grow and sustain. It is only good leadership that brings in good politics responsible for development. Therefore, it is important that institutional and national leadership identify the need to have political thinking at the highest level and support e-learning for development in the right direction.

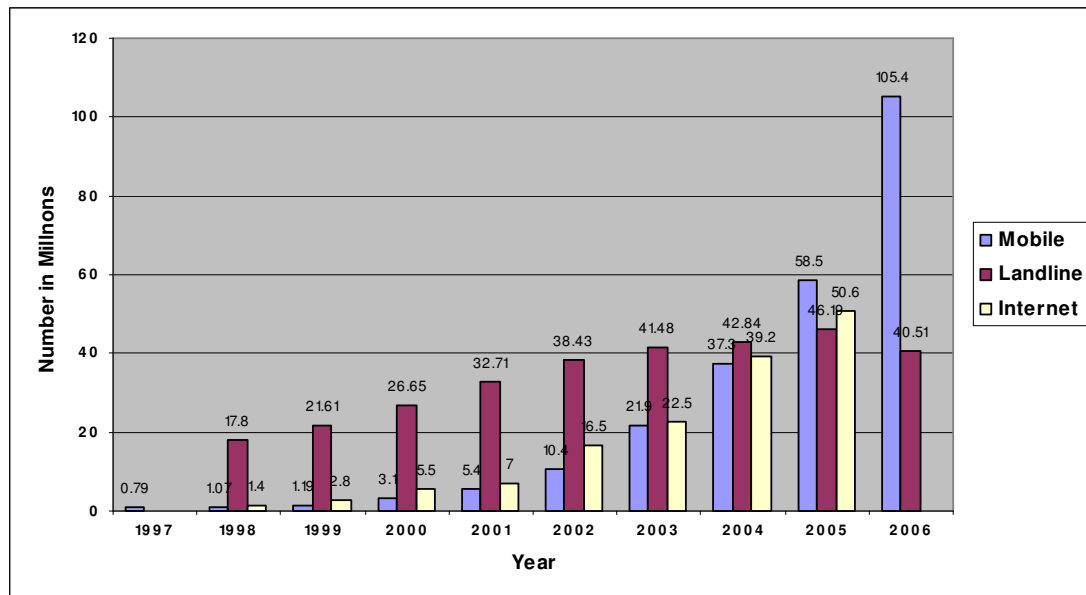


Figure 2: Telecommunication Infrastructure in India

(Sources: <http://www.internetworldstats.com>, TRAI, 2005, and <http://www.coai.com>)

There are no policies to support e-learning

E-Learning programmes are started basically due to the 'lone ranger' enthusiasts in many institutions. Well organized, need-based and researched policies should ideally follow the practical demonstration of the usefulness of e-learning. Successful e-learning programmes require active support of institutional policies. As has been discussed earlier, the access to Internet is extremely poor in Indian situation and demands 'access policies' for students. For example, institutions need to think how to provide access to all the students. The home-computing policy (Davies & Preece, 1990) of UKOU was an example in this direction. If you want to have e-learning programmes, it would be useful to plan for 'student loans' and 'community multimedia centres' (Hughes, Eashwar, & Jennings, 2004) to facilitate student access to technology. Institutional policy on e-learning should also consider issues related to staff release for involvement in e-course development, workload for teaching e-courses, evaluation of the effectiveness of e-courses, and funding. In the absence of any policy on e-learning, what have been observed are '*ad hoc*' practices that are not proactive, but reactive in nature. Therefore, the need of the hour is to have policies in place with the active support of the decision-makers at the highest level. We should ideally follow the practice of "Think Strategy before Technology", and put 'Instructional Technology before Information Technology'.

The pedagogies of e-learning yet to unfold clearly

There are notions that putting lessons online is e-learning. The conventional Open and Distance Learning 'mindset' believes in the 'asynchronous' model of e-learning, where learning materials are available online for the learners to access anytime, anywhere. However, e-learning allows us to have the best of both 'asynchronous' and 'synchronous' learning environments.

In 2001, the School of Social Sciences at the Indira Gandhi National Open University (IGNOU) started a Post Graduate Certificate in Participatory Management of Displacement, Resettlement and Rehabilitation with the support of the World Bank as a fully online programme that included both 'synchronous' and 'asynchronous' learning opportunities. It is a first of its kind programme, where participation in discussion forum (PDF) is used as a peer evaluation mechanism. Other programme features include web course units with interactive exercises, online computer marked assignments, online diary submissions, e-counselling (Chat) and e-library (Mishra and Jain, 2002).

Other online initiatives of IGNOU includes online certificate programmes on Food Safety in collaboration with the Ministry of Health and Family Welfare, Government of India (Thomas, Kapur and Kumar, 2004), a web-enhanced training package on the Windows version of the UNESCO's popular database management package – CDS/ISIS (Kanjalal, Ghosh and Kumar, 2004), and the Web-based Training Programme for the min-career diplomat of the Government of India (Bhusan, 2004).

At the Yashwantrao Chavan Maharashtra Open University (YCMOU) e-learning is used as a learner support mechanism especially for its Electronics Engineering Diploma Programme (EEDP). Students use a discussion forum to discuss concepts and clarify doubts. Deshmukh (2002) after a survey of a group of students who

utilized the online support recommended that online learning may be more effective by providing: (i) more 'expert' counsellors who will respond quickly to student queries, (ii) more detailed information on the website, and (iii) more support from the coordinators at the study centre.

Madanmohan and Ganesh (2003) reported experiences of Indian Institute of Management, Bangalore (IIMB) in using e-learning. They raised concern over the use of e-learning as the student interaction was poor both in terms of quantity and quality.

Though interaction and interactivity are touted as the major ingredients of successful e-learning (Mishra, 1999), the right amount of interaction is yet to be defined. Interestingly, the pedagogy of e-learning is still evolving. E-learning can be used in three different ways: web integrated in the classroom to supplement teaching, web used in a mixed mode (as blended learning), and web used independently as a stand alone system (Berge et al, 2000). However, what e-learning tools to use should be a matter of concern at the design stage of a programme. For example, the use of 'chat' and/or discussion forum requires that groups be formed to increase the usefulness of these sessions. Many a times, this is not visualized, and therefore, the quality of interaction suffers. An online course with 500 enrollment supported by synchronous components would require at least 50 groups and the same number of mentors/tutors to interact/teach in the sessions.

There are many pedagogic models: "learning by doing" (Schank, 1997), "problem-based learning" (Barrows, 1994), "case-based learning" (Lynn, 1996; Chen et al, 2006), and "learning by designing" (Naidu, Anderson, and Riddle, 2000) that can be effectively utilized for e-learning. Mishra (2002) proposed an eclectic framework for designing web-based learning environments (Fig. 3). Sharma and Mishra (2007) presented another pedagogical framework for e-learning: Experience-Reflect-Interact-Construct (ERIC), where the system should provide learning experience to be accessed from anywhere, anytime through learning objects in different web-enabled formats (text, audio, video, animation, etc.), followed by working on learner reflection activity designed *a priori*. After performing the activity, the learner should be engaged in both 'synchronous' and 'asynchronous' interaction, leading to construction of his/her learning through group works, presentations, projects and other creative activities.

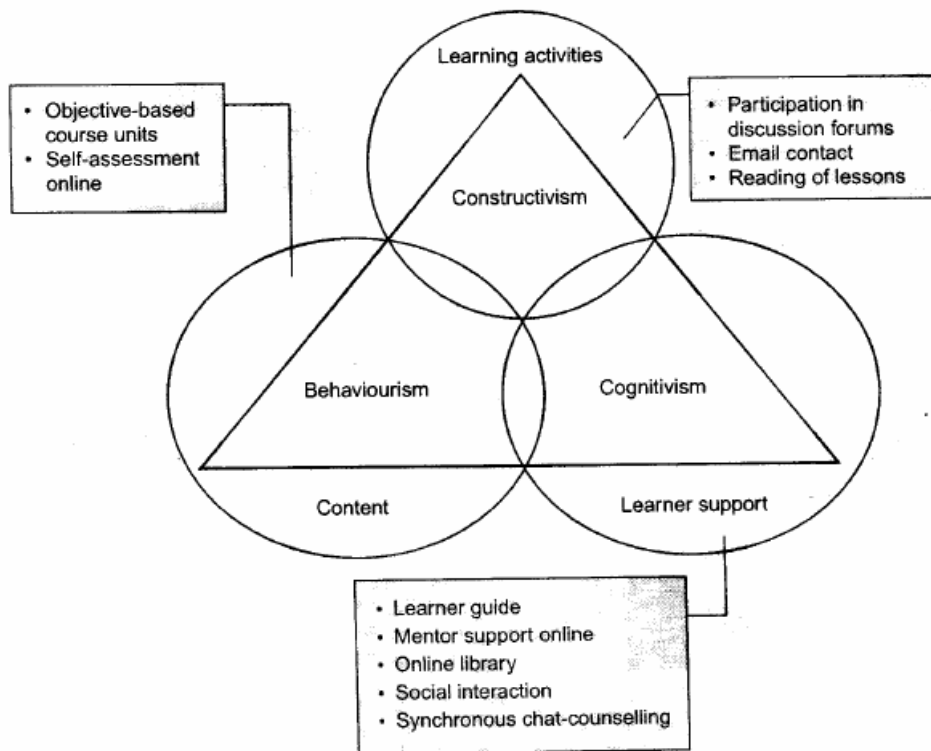


Figure 3: Design framework for online learning environment

(Source: © Mishra, 2002)

Lessons Learned

In a recent publication, Mishra and Sharma (2007), after analyzing 23 case studies from all over the world, listed the following as 'lessons learned':

Learner Centredness: Development of e-learning programmes should take into account the learner access to technology, and institutions should design niche and need-based programmes. The programmes should also provide 'learner autonomy' and guide the learners to become 'self-directed'.

Teacher Roles: In e-learning programmes, teachers can play a variety of roles: course creator, content developer, assessor, tutor, etc. They require continuous updating, particularly on the use of technology, and therefore, continuous professional development online should be considered as a strategy to change their attitude towards e-learning.

Technology: As access to technology is still a problem, it is important that programmes designed meet the requirements of low-bandwidth access. Certain amount of asynchronous materials could be delivered through CD-ROMs to reduce the dependencies on Internet.

Content: E-learning contents, apart from meeting the needs of the target groups, should be of high quality in terms of language, accuracy and appropriateness of format. While designing multimedia materials, the guidelines of Clark and Mayer (2003) may be followed:

- Use words and graphics rather than words alone;
- Place corresponding words and graphics near each other;
- Present words as audio narration rather than on-screen text;
- Presenting words as both text and audio narration can hurt learning;
- Adding extraneous picture/sound can hurt learning; and
- Use conversational style and virtual learning agents.

Pedagogy: It is important to design authentic learning environments that promote sustainable learning. Teachers can't be replaced by digital content, and e-learning should promote learning in communities.

Myths

E-Learning is cheap and cost-effective

No. Though the cost of technology is reducing fast, e-learning is not yet cheap. It requires substantial investment in terms of human resource, and infrastructure cost. Of course, there is possibility of cost-effectiveness due to 'economies of scale'.

If we build it, they will come

No. Without building digital bridges, it would be difficult for the learners to join e-learning programmes. E-learning programmes need to be promoted and marketed amongst the target groups to attract clientele.

E-learning programmes can be developed quickly

Yes, online programmes can be developed quickly, if you already have the digital contents. Creation of appropriate digital contents and the design of e-learning delivery require planning and development time, and therefore, e-learning is not really a 'quick fix' affair.

Conclusions

E-learning in India is still at an infant stage, in spite of the tremendous developments in the IT sector. The poor access to technology demands building of 'digital bridges' to support student learning, and emergence of a range of communities of practice that thrive on the World Wide Web and support their own life long learning needs. This is a tall order, but not a difficult task. The community of distance educators is pre-disposed to use of e-learning, and embrace it into their teaching and learning. However, what is required is adequate support at the level of policy, technology access and training of teachers. To boost the systematic development of e-learning in India the following steps are recommended for consideration:

1. Establishment of **Indian Council for Online Learning (ICOL)** as a statutory body to:
 - Develop a national distributed repository of Re-usable Learning Objects (RLO);
 - Maintain standard of Online Learning;
 - Coordinate and promote Online Learning;
 - Accreditate Online Learning courses and programmes; and
 - Develop and maintain Online Learning Portals for life long learning.

2. Establishment of a "**e-Learning Consortium**" including member educational institutions to offer e-learning programmes without duplicating efforts;
3. Develop facilities for **online training of teachers**; and
4. Facilitate **development of small re-usable learning objects by teachers** through a sharable web portal.

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