Chapter – I

INTRODUCTION

1.1 E-learning – Present Scenario:

E-Learning is essentially a powerful vehicle that enables the transmission of knowledge and the acquisition of skills in an interactive way through the internet. The experience-based progress in computer technology and the boom in the internet during last few years have had a considerable influence on sectors of our society, including education and capacity-building through training etc. A Virtual Learning Environment (VLE) is a system that creates an environment designed to facilitate teachers in the management of educational courses for their students, especially a system using computer hardware and software, especially involving distance learning. Institutionally sponsored distance education began in the United States in 1874. The Correspondence University of Ithaca, New York (a correspondence school) was founded in 1883. The term “distance education” was first used in a University of Wisconsin- Madison in 1892. In 1920, Idney Pressey, an educational psychology professor at Ohio State University, developed the first “teaching machine.” This device offered drill and practice exercises, and multiple choice questions. In 1953 the University of Houston offered the first televised college credit classes via KUHT, the first public television station in the US. The live telecasts ran from 13 to 15 hours each week, making up about 38% of the program schedule. Most of the courses were aired at night so that students who were working during the day could watch them. By the mid-1960s, with about one-third of the station’s programming was devoted to education, more than 100,000 semester hours had been taught on KUHT.

In 1960 PLATO (Programmed Logic for Automated Teaching Operations) system was developed at the University of Illinois at Urbana-Champaign. The rights to PLATO are now owned by PLATO Learning, which delivers managed course content over the Internet. The PLATO system featured 27 multiple roles, including students who could study assigned lessons
and communicate with teachers through E-Learning notes, instructors, who
could examine student progress data, as well as communicate and take lessons
themselves, and authors, who could do all of the above, plus create new
lessons. There was also a fourth type of user, called a multiple, which was used
for demonstrations of the PLATO system. IBM, via its subsidiary Service
Bureau Corporation, introduced COURSEWRITER an E-Learning interactive
system in the 1960s. The system included course management features and
roles for the users such as instructor, manager, and student, and allowed
intercommunication among them. This system was finally taken out of service
on April 10, 1980, after twelve years of operation. Over 20,000 people used the
system in that interval, and programming was available for 17 university
courses. The Havering Computer Managed Learning System was developed in
London, England. By 1980 it had been used by over 10,000 students and 100
teachers in applications that included science, technology, remedial
mathematics, career guidance, and industrial training. Patrick Suppers,
professor at Stanford University, developed computer-based courses in Logic
and Set Theory that were offered to Stanford undergraduates from 1972 to
1992. In 1973 a report written for the University of Michigan described the
educational uses of computers at the university. These included “drill, skills
practice, programmed and dialog tutorials, testing and diagnosis, simulation,
gaming, information processing, computation, problem solving, model
construction, graphic display, the management of instructional resources and
the presentation and display of materials.”

In 1981 School of Management and Strategic Studies at the Western
Behavioral Sciences Institute in La Jolla, California started an E-Learning
program. University of Sussex, UK, implemented Poplog, an interactive 28
learning environment for AI and Computing students. It included hyperlinked
teaching materials, an extensible text editor, multiple programming languages
and interactive demonstrations of AI programs. In 1984 the OECD organized a
conference in Paris, France on “Education and the New Information
Technology.” In 1985, Patrick Suppers, professor at Stanford University,
received a grant from the National Science Foundation to develop a first-year calculus course on computer. After several years of development and testing in summer camps, computer based courses in Beginning Algebra, Intermediate Algebra, and Precalculus were created and tested during the 1991-92 academic year. In 1992, after porting the software to the Windows operating system, the Education Program for Gifted Youth (EPGY) was formally launched at Stanford University, making these courses available to qualified students. In 1987, Glenn Jones of Jones Intercable in Denver, Colorado believed he saw a potential goldmine when he created a new system, called Mind Extension University in 1987. Jones created a system where telecourses could be provided across a network to various colleges and at the same time, students could interact with the instructors and each other, by using email, sent over the internet. Jones then began to beam the courses by satellite, so anyone with a satellite dish could watch the classes and if they had a computer and a phone line they could interact with the class. In the history of virtual learning environments, the 1990s was a time of growth, primarily due to advent of the Internet. A manual for students in web based courses was published on E-Learning by Kent Norman at the University of Maryland, College Park, Laboratory for Automation Psychology. Before anyone called it e-Learning, in late 1997, learning guru Elliott Masie said, “E-Learning is the use of network technology to design, deliver, 29 select, administer, and extend learning.” In 1998, he wrote, “eLearning is learning on Internet Time, the convergence of learning and networks. ELearning is a vision of what corporate training can become. E-Learning is to traditional training as e-Business is to business as usual.” Training is something someone does to me, learning is something I do for myself. Learning isn’t content. Learning isn’t infrastructure. Learning is a process of forging neural links. It’s new thought being wired into the brain’s network. Hard to believe, given that the brain is a chemical soup shot through with electrical charges, more closely resembling a haggis than a sophisticated
network processor. E-Learning came along at the right time to embrace the learner-centric view.

In mid-2002, “Blended Learning” began cropping up on conversation. At first, blended meant computer learning + classroom learning. People who had shortsightedly defined e-Learning as computer based learning, talked of combing e-Learning with live workshops. Some people continue to define blended learning as a sandwich made of alternating slices of computer learning and live learning. More sophisticated practioners were saying the blend might comprise chunks of computer-mediated learning, classroom, lab, collaboration, knowledge management, apprenticeship, case discussion – whatever mix is the best way to accomplish the job. E-Learning is joining an array of tools to improve business performance. Business metrics are business performance. Business metrics are replacing training metrics. The success of an e-Learning initiative is measured in customer satisfaction, quicker time-to-market, higher sales, and fewer errors. E-Learning is proving useful for organizations in many ways including:

(a) Accelerating business process.
(b) Making mergers work.
(c) Improving the productivity of sales channels.
(d) Helping customers become smarter buyers.
(e) Enabling 30 vendors and partners to work more closely and quickly,
(f) Accelerating the orientation of new employees,
(g) Bringing new leaders up to speed faster,
(h) Aligning the workforce with current strategy.
(i) Launching new products and services globally.
(j) Rolling out enterprise systems such as CRM and ERP.
(k) Documenting regulatory compliance.

The application of information and communications technology to education and training is now developing fast. The rapid emergence of new technologies outpaces the ability of learning communities to apply the technological infrastructure in any systemic or sustainable fashion. Information and
communication technologies, known as ICT, have undergone dramatic changes in the last 25 years, each time producing new and exciting opportunities for the education sector. The 1980’s was the decade of the personal computer (PC), which brought computing into the home, and in an educational setting, into the classroom. The 1990’s gave us World Wide Web (The Web), building on the infrastructure of the internet, which has revolutionized the availability and delivery of information. The implication of web technologies on education, often described in terms of e-leaning, are potentially far reaching and are still being explored and debated. Pedagogical and related users are more important in this field are often under-estimated by the technologists. E-learning is any technologically mediated learning using computers whether from a distance or in face to face classroom setting. The interactive learning—now known as "e-learning" has boomed along with the growth in the Internet and intranets. In the midst of this information revolution, we are now confronted with a third wave of novel technologies, that of mobile and wearable computing, where computing devices are already becoming small enough so that we can carry them around on us at all times, and, in addition, they have the ability to interact with devices embedded in the environment.

Over the past few of years, there has been widespread recognition of the need to place e-learning in the much broader context of the emerging knowledge economy. In particular, the development of infrastructure embracing both e-learning and information environments is now regarded as a key issue.

1.2. Focus of the Current Study:

In an era of information, learning is the ultimate survival skill. Bright, knowledgeable people with the mental ability and tools they need to find out what they need to know and do, are the key to corporate success. Learning has always been humanity’s ultimate survival skill. Corporations and industries have replaced yesterday’s villages and tribes. E-Learning promises better use of time, accelerated learning, global reach, fast pace and accountability. It’s manageable. It cuts paperwork and administrative overhead. Change is
rampant, and learning is the only way to keep up. Intellectual capital is the primary factor of production of wealth. In the Knowledge Economy, only the smartest will survive, the ones with the highest Corporate IQ. And education and learning, unlike the fixed IQ a learner is born with, is the only way we know how to raise that IQ level. Recent research finds that firms that invest in the development of their people have significantly higher returns over the long term. Intangibles have become more important than tangibles, yet our ancient accounting principles and GAAP rules still value such things as knowledge, skills, and emotional intelligence at zero. Employees, rather than being human capital and an asset are still carried as a liability and expense. Think about how a go-getter knowledge worker learns something new. The worker checks Google to get a framework of what’s to be learned and dives right in, experimenting, building on knowledge of similar subjects, and 31 asking people in the office who’ve been there. The goal is not to master a subject or pass a test; it’s to find out enough to get the immediate job done. The worker doesn’t take off for a weeklong workshop; day-by-day for months. This is self-directed learning, and that’s yet another reason it escapes notice. No one is responsible for toting up the informal learning workers. There are no promotions or Vice President positions attached to learning. No one gets the credit for increasing the Corporate IQ. Many learners today are not self-directed; they are waiting for directions. It’s time to tell them that the rules have changed. It’s in their self-interest to become proactive learning opportunists.

1.3. Technology Trends in Web Based Education:

The Internet is a network of networks, linking computers to computers sharing the TCP / IP protocols. Each runs software to provide or ‘serve’ information and/or to access and view information. The Internet is the transport vehicle for the information stored in files or documents on another computer. It can be compared to an international communications utility servicing computers. The Internet itself does not contain information. It is a slight misstatement to say a “document was found on the Internet”. It would be more correct to say it was
found through or using the Internet. Internet is an exciting innovation in the field of education. Following are the areas where the Internet is being used effectively:

(a) Internet allocates learning resources to individuals and groups.
(b) Internet helps the students to collect related information from Outside world.
(c) The students can give the educational information with the help of e-mail on computer.
(d) Internet provides direct interaction between students and the subject matter to be learned.
(e) Internet engages the students in tutorial interaction and dialogue.
(f) Internet provides easy access to files of information for reference and guidance.
(g) Internet can be used as supplement to traditional instruction methods.
(h) Internet can be used to replace the traditional classroom situation.

1.4. E-Learning:

“E-Learning is the use of technology to enable people to learn anytime and anywhere. E-Learning can include training, the delivery of just-in-time information and guidance from experts.”

If you could stop time and inexpensively bring together all of the people in your organization who need to learn and the resources to teach them, you would not need e-learning. In the real world, people have jobs to do and budgets are limited. Your learning program will need the power of technology to overcome the limitations of time, distance and resources. You know that people learn in many different ways and at different times. To support these different learning needs, you will need different e-learning delivery methods. Additionally, you will need a way to develop and manage e-learning.

1.5. Operational Definition of the terms:

E-Learning: Education via the Internet, network, or standalone computer. E-learning is essentially the network-enabled transfer of skills and knowledge. E-learning refers to using electronic applications and processes to learn. E-
learning applications and processes include Web based learning, computer-based learning, virtual classrooms and digital collaboration.

**1.5.1 Component of e-learning:**

a) The **pedagogical** dimension of E-learning refers to teaching and learning. It includes analysis of objectives, subject matters etc., and pedagogical design including choice of **pedagogic strategy**.

b) The **technological** dimension of the E-Learning Framework concerns the technical infrastructure (e.g. platforms used, standards chosen, hardware).

c) The **interface design** refers to the overall look and feel of e-learning programs (page and site design, content design, navigation, and usability testing).

d) The **evaluation** for e-learning includes both **learner assessment**, **teacher evaluation** and evaluation of the **learning environment**.

e) The **management** of e-learning refers to the maintenance of learning environment and distribution of information.

f) The **resource support** dimension of the E-Learning Framework examines the online support and resources required to foster meaningful learning environments.

g) The **ethical** considerations of e-learning relate to social and political influence, cultural diversity, bias, geographical diversity, learner diversity, information accessibility, etiquette, and the legal issues.

h) The **institutional** dimension is concerned with issues of administrative affairs, academic affairs and student services related to e-learning.

**1.6 Advantages of E-learning:**

E-learning has definite benefits over traditional classroom training. While the most obvious are the Flexibility and the cost savings from not having to travel or spend excess time away from work, there are also others that might not be so obvious. For example:
a) It's **less expensive** to produce -- Using Trainerson's authoring software to produce your own asynchronous training programs, e-training is virtually free once you reach the break-even point. Synchronous programs will have continued costs associated with the instructor managing the class, but will still be lower than traditional courses.

b) It's **self-paced** -- Most e-learning programs can be taken when needed. The "books" that you set up using Trainersoft create a module-based design allowing the learner to go through smaller chunks of training that can be used and absorbed for a while before moving on.

c) It moves **faster** -- According to an article by Jennifer Salopek in "Training and Development Magazine," e-learning courses progress up to 50 percent faster than traditional courses. This is partly because the individualized approach allows learners to skip material they already know and understand and move onto the issues they need training on.

d) It provides a **consistent** message -- E-learning eliminates the problems associated with different instructors teaching slightly different material on the same subject. For company-based training, this is often critical.

e) It can work from **any location and any time** -- E-learners can go through training sessions from anywhere, usually at anytime. This Just-In-Time (JIT) benefit can make learning possible for people who never would have been able to work it into their schedules prior to the development of e-learning. (If you manage a corporate learning program, however, be careful about requesting that workers learn on their own time from home.)

f) It can be **updated easily** and quickly -- Online e-learning sessions are especially easy to keep up-to-date because the updated materials are simply uploaded to a server. CD-ROM-based programs may be slightly more expensive to update and distribute, but still come out cheaper than reprinting manuals and retraining instructors.

g) It can lead to **increased retention** and a stronger grasp on the subject -- This is because of the many elements that are combined in e-learning to
reinforce the message, such as video, audio, quizzes, interaction, etc. There is also the ability to revisit or replay sections of the training that might not have been clear the first time around. Try that in a crowded auditorium!

h) It can be easily managed for large groups of students -- Trainer soft Manager allows corporate training directors, HR managers and others to keep track of the course offerings schedule or assign training for employees and track their progress and results. Managers can review a student's scores and identify any areas that need additional training.

1.7. Need of E-Learning:

Consequent to the social technological and economical transformation, E-education has become an important aspect of learning as globalization encompasses local economies like never before the development of a skilled work force becomes an international concerned. The new global economy poses more complex challenges to workers, requiring hire levels of education, computer literacy, critical thinking, information analysis and synthesizing skills. However, educational deficiencies have brought the organization of curriculum and teaching methods as they relate to labor market preparation is needed. Academic and corporate environments are redesigning to adequately prepare people to functioning in an information society. Corporate executives are beginning to understand that enhancing employee skills are the key to create a sustainable competitive advantage. Academicians need to evaluate how the student can benefit from technology.

1.8. Goals of E-Learning:

E-Learning lessons are generally designed to guide students through information or to help students perform specific tasks. Information based E-Learning content communicates information to the student. Examples include content that distributes the history or facts related to a service, company, or product. In information-based content, there is no specific skill to be learned. In performance-based content, the lessons build off of a procedural skill in which the student is expected to increase proficiency.
1.9. E-Learning in Institutions of Higher Education:

Computer Aided learning, or as Computer Based Learning refers to the use of computers as a key component of the educational environment. While this can refer to the use of computers in a classroom, the term more broadly refers to a structured environment in which computers are used for teaching purposes. Computer- Aided Learning (CAL) services are where a student learns by executing special training programs on a computer, relating to their need. Computer Based Training is especially effective for training people to use computer applications because the CBT program can be integrated with the applications so that students can practice using the application as they learn. Historically, CBT's growth has been hampered by the enormous resources required: human resources to create a CBT program, and hardware resources needed to run it. However, the increase in PC computing power and especially the growing prevalence of computers equipped with CD-ROM / USB etc. is making CBT a more viable option for students. Many PC applications now come with some modest form of CBT, often called a tutorial. Web-based training (WBT) is a type of training that is similar to CBT; however, it is delivered over the Internet using a web browser. Web-based training frequently includes interactive methods, such as bulletin boards, chat rooms, instant messaging, videoconferencing, and discussion threads. Web based training is usually a self-paced learning medium though some systems allow for online testing and evaluation at specific times. Collaborative or group learning refers to instructional methods whereby students are encouraged or required to work together on learning tasks. It is widely agreed to distinguish collaborative learning from the traditional 'direct transfer' model in which the instructor is assumed to be the distributor of knowledge and skills.

A Learning Management System (LMS) is a software package that enables the management and delivery of online content to learners. Most of the Learning Management Systems are web-based to facilitate “anytime, any place, any pace” access to learning content and administration. Typically an LMS facilitates learners for registration, delivery of learning activities, and learner
assessment in an online environment. More comprehensive Learning Management Systems often include tools such as competency management, skills-gap analysis, succession planning, certifications and resources (Venues, rooms, textbooks, instructors etc.)

1.10. Statement of the Problem:
“To study the need of e-learning this can make education process more easily accessible and interactive for educator and learner at any institution”.

1.11. Hypothesis:
1. A growing number of higher learning institutions are employing e-learning tools.
2. E-Learning tools are more effective than traditional learning tools in higher education
3. ICT Required Less Budget Provision.

1.12. Objectives of the Research:

The purpose of present research work is to study the need of e-learning is to evaluate the impact of e-learning in institutions of higher learning. An attempt shall be made to measure the changes effected by the introduction of e-learning procedures in these institutions. For this purpose the area of research shall be confined to the region of Marathwada Region, being one of the backward areas of the country is specially selected so as to evaluate the impact of e-learning, in general, in the country.

1. To study the technologies used in education.
2. To explore the availability of e-learning technologies.
3. To ascertain the utility of technology in higher education.
4. To make a comparison of different e-learning model.

1.13. Research Methodology:

The present study is based on the data collected from the teachers working in the institutions of higher learning. For this purpose a questionnaire has been designed. The questionnaire has been divided into two sections.
Firstly General information containing five questions and secondly professional information containing (60) questions.

The questionnaire has been implemented in eight districts of Marathwada. Overall 1000 respondent’s response was collected out of which 680 response of respondent’s selected for the study of analysis.

Table Showing the Collection of Data

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<tr>
<th>Sr. No</th>
<th>District</th>
<th>No. of Respondents</th>
<th>Collected</th>
<th>Selected</th>
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<td><strong>Total</strong></td>
<td><strong>1000</strong></td>
<td><strong>680</strong></td>
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</table>

Around (125) respondent’s, from each district, were selected for the purpose of study. However after discarding incomplete only (680) respondent’s were finally chose. The selective random sampling method is followed.

1.14. Scope of Study:

The area of study includes all the eight districts of Marathwada region namely Aurangabad, Nanded, Parbhani, Jalna, Latur, Osmanabad, Beed and Hingoli.

1.15 Limitation:

The study is limited to Institutes of higher education of Marathwada region.

1.16 Findings:

The above study indicates that majority of the respondents are well-aware of E-learning concepts and are using E-learning software in their day-to-day discharge of duties.

Most of the institutions have NAAC or NBA accreditation. It also observed that majority of respondents are from engineering courses and most of the concern universities are not running e-learning courses. But majority of the
The study reveals that video conferencing and webinar culture is known to the respondents. But a majority is unaware of webinar based training. Similarly 60% respondents accepted that they are not use simulation techniques, However a large number of respondents using PPT’s. However a large number of respondents have e-learning related conferences. Most of the respondents are self educated or some have teaching degrees or training courses. It is also found that teachers are getting enough time for preparation; Almost 85% respondents are having the experience of using online resources.

The majority expressed the opinion that ICT policies contributes moderately towards building of individual’s characteristics.

Majority of respondents stated that ICT policies moderately contribute to good education. Moreover it contributes moderately toward group work. A moderate contact is expected between instructor and students. A large number of respondents are of the opinion that a balanced approach is required between face to face and via internet. But budgets provided by the institution beyond 5% on ICT. The majority also agreed that Head of the institution is formally responsible. Because the implementation of ICT policy is the responsibility of institutions higher authorities.

The study also discloses that ICT policies increases efficiency, contributes moderately towards flexibility, increase the cost effective and moderately contributes towards generation of income. It also indicates that also moderately creating more opportunities for continuing education of learners.
The moderate contribution is also indicated in creating more opportunities for international students. Also moderately contributes towards the enhancement of competitive spirit and also moderately enhances status and reputations of institutes in increasing demand for continuing education.

The study also indicates that a very little response shown by the international students. However the teachers have mentally prepared themselves to accept the change. It is also affirmed that the ICT play do assist in setting up of the norms of staff assessment and implementing such norms. It is also established that it can be an effective tool in external quality assurance.

A majority of the respondents felt that ICT should be mandatory, the contributions of ICT through E-mail, Web resources, Wireless Solutions, Web based course management and externally available course and modules largely recognized appreciated by the respondents.
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