E-Learning 2.0 Technologies and Web Applications in Higher Education

Jean-Eric Pelet
KMCMS, IDRAC International School of Management,
University of Nantes, France

A volume in the Advances in Higher Education and Professional Development (AHEPD) Book Series

Information Science REFERENCE
An Imprint of IGI Global

Managing Director: Lindsay Johnston
Production Manager: Jennifer Yoder
Publishing Systems Analyst: Adrienne Freeland
Development Editor: Allyson Gard
Acquisitions Editor: Kayla Wolfe
Typesetter: Christina Barkanic
Cover Design: Jason Mull

Published in the United States of America by
Information Science Reference (an imprint of IGI Global)
701 E. Chocolate Avenue
Hershey PA 17033
Tel: 717-533-8845
Fax: 717-533-8661
E-mail: cust@igi-global.com
Web site: http://www.igi-global.com

Library of Congress Cataloging-in-Publication Data

CIP Data - Pending
ISBN 978-1-4666-4876-0 (hardcover)
ISBN 978-1-4666-4877-7 (eBook)
ISBN 978-1-4666-4878-4 (print & perpetual access)

This book is published in the IGI Global book series Advances in Higher Education and Professional Development (AHEPD) (ISSN: 2327-6983; eISSN: 2327-6991)

British Cataloguing in Publication Data
A Cataloguing in Publication record for this book is available from the British Library.

Chapter 2
Effective E-Learning Strategies for a Borderless World

Neeta Baporikar
University of Pune, India

ABSTRACT

e-Commerce, e-Business, e-Shopping, and other terms beginning with the letter "e" are used to refer to the electronic world and the Internet. Hence, when we talk today about e-Learning, we think of a site in the Internet or Intranet that is available to everybody, an illustrated encyclopedia in electronic format, or even a multimedia-based presentation. In fact, all these ideas are far beyond an e-Learning definition. Electronic learning is not only a kind of virtual or distance education to deliver content by electronic means through the use of the Internet, Intranet, or CD-ROM, but it is aimed at effective learning in real time. Formerly known as Computer-Based Training (CBT), e-Learning is increasingly oriented to real-time learning, that is, activities facilitating simultaneous interaction between learners and instructors. In this regard, it is important to analyze the effective strategies that will be used for making e-Learning effective in this borderless world. The objectives of this chapter are to understand the essentials of effective e-Learning Strategies and identify the organizational barriers and facilitators in embedding e-Learning with Knowledge Management. The methodology adopted is an in depth literature review and grounded theory approach with contextual analysis and is focused on the effectiveness of e-Learning from the organizational point of view.

INTRODUCTION

After hearing about the Digital Age in the 90's, e-Commerce, e-Business, e-Shopping and other terms beginning with the letter 'e' to refer to the electronic world and the Internet, when we talk today about e-Learning, we think of a site in the Internet or Intranet that is available to everybody, an illustrated encyclopedia in electronic format, or even a multimedia-based presentation. In fact, all these ideas are far beyond an e-Learning definition. Electronic learning is not only a kind of virtual or distance education to deliver content by electronic means through the use of the Internet, Intranet, or CD-ROM, but is aimed at effective learning in real time. Studies have shown that the average learning retention rate resulting from traditional approaches is about 58%; however, this was improved with e-Learning and resulted in a learning retention of about 72.5 or 92.8%, which is quite high. Formerly known as Computer Based Training (CBT), e-Learning is

DOI: 10.4018/978-1-4666-4876-0.ch002

increasingly oriented to real-time learning, that is, activities facilitating simultaneous interaction between learners and instructors. In this regard, it is important to analyze what are the effective strategies that will be used for making ELearning effective both as a pedagogy and knowledge management tool. This chapter aims to analyze what are the effective strategies that will be used for making ELearning effective in this borderless world. Based on relevant theoretical frameworks, in depth literature review the goals of this chapter are to understand the essentials of effective ELearning Strategies and identify the organizational barriers and facilitators in embedding ELearning with Knowledge Management. It will also serve the professionals and academics to improve their understanding of the strategic role of e-learning at different levels of the information and knowledge management at a global level, which is the need of the hour. Understanding the networked environments, with the onset of e-m-learning and knowledge management technologies, combined with other web 2.0 technologies, have an impact on organizations and their relationships within/outside their boundaries. This chapter intends to facilitate understanding of the essentials of effective ELearning Strategies, identify the organizational barriers and facilitators in embedding ELearning, both as a pedagogy and knowledge management tool for teaching, training and development in this borderless world. Boettcher (1997) argued: "Now that the World Wide Web is providing a whole new context for teaching and learning, we have the need to return to the core principles of teaching and learning, and create a new model of teaching and learning." Therefore, if technology is applied in conjunction with pedagogical concepts, it can create an effective student-centered environment and enhance learning outcomes. A common thread among the plethora of definitions of knowledge management is that its objective is to identify and leverage the collective knowledge in an organization to help organizations compete and survive. One potential lever is e-learning, the creation and distribution of organizational knowledge through the online delivery of information, communication, education, and training. John Chambers, of Cisco Systems, said: "The two great equalizers in life are the Internet and education", so why not fuse the two to provide an efficient way to empower a workforce with the skills and knowledge it needs to compete amid the rapid pace of change in business? In this paper we discuss the e-learning strategies that will aid in better knowledge management and enhance effectiveness required in this borderless global world.

E-learning is certainly becoming the most accepted tool in organizations both as a training pedagogy and knowledge management. E-learning framework encompasses the planning and implementation elements necessary for organizations to leverage existing technologies and implement new ones to promote organizational learning and contribute to the management of organizational knowledge. Many corporations are discovering that ELearning has many of the same attributes as basic Knowledge Management processes, and thus can be a tool for Knowledge Management (Wild, Griggs, & Downing, 2002). The common goal of both is to establish a collaborative learning environment and practice a co-operative culture for knowledge acquisition and sharing. A major aim of Knowledge Management is to establish a positive learning environment in which people can conduct all sorts of learning activities and share knowledge with other people in organization (Bukowitz & Williams, 1992; Hong & Kuo, 1999; Martensson, 2000). Liu and Wang (2009) argued that ELearning is the technology and tool supporting Knowledge Management and Knowledge Management is the premise and operational platform of ELearning systems. Transfer and communication of tacit knowledge is considered crucial for effective learning yet it is the trickiest part. Tacit knowledge can be communicated through interaction, collaboration and conversations in communities/network of practices (Roknuzzaman, Kanai, & Umemoto,

2009). Through the conversion of tacit knowledge into explicit knowledge, the EL system and/or instructor can deliver knowledge resources very easily, and users/learners can acquire knowledge more conveniently. Ponce (2003) argued that data mining methods can be used in ELearning systems to "detect unknown patterns in user learning behaviour, learning resources and knowledge mastering bottlenecks".

The objectives of this chapter are then to recognize and understand the essentials of effective ELearning strategies and identify organizational barriers and facilitators so as to help in embedding ELearning strategy for successful Knowledge Management in a modern complex borderless world. In the Internet Age when knowledge is essential for survival, companies seek tools such as e-Learning, for a fast response to changing market demands. On the other hand, traditional training lags behind the economy because it is time consuming and due to logistics requirements and related expenses. Moreover, day by day, for adult learning, e-Learning is proving to be the best tool: it provides the learner with material he/she is interested in, knows his/her expectations, and uses the best learning practice. With an expanded e-Learning, documents, schedules, and long hours of instructor-aided learning are being replaced with a cooperative, easy, and fast system entailing a new learning approach closely related to real business and individual needs as the knowledge that exists within organization is the only sustainable source of competitive advantage.

BACKGROUND

The subject of Electronic Learning (E-Learning) has become pertinent in the dynamic world of today which is driven by information technology. An identified need to facilitate the process of learning in terms of efficiency, effectiveness and spread has led to the application of electronic technologies in training and education. No doubt, the concept of electronic learning has its attending challenges in terms of appeal and efficiency, but it has definite advantages that have endeared the education and training industry. Learning process now has a new "face" addressing varying target audience that hitherto would have been impossible. Through e-learning, obtaining formal education for those who missed the opportunity at the earlier phase of their life has become easier because technology has cut down the time and space constraints in conventional open/distance learning education. Electronic learning will continually liberalize the education industry, narrowing the gap and widening the scope. To combine work and education which used to be difficult and strenuous is much easier now with e-learning. The global economy has not been left out of the positive impacts of e-learning especially in the corporate world where e-learning has reduced the cost of training of personnel. For example, IBM seeing the potentials in e-learning had a head start in adopting e-learning and is known to have already achieved annual savings of well over $200million. Market research analyst forecasts put the global e-learning market at $23billion in 2004 and growing up to $33billion in 2005. What about the future of e-learning? It remains bright because the industry that drives the concept of, that is, information technology is ever dynamic to birth positive changes. The overall goal of e-learning is to serve learners who cannot or will not attend traditional classes by using electronic information technologies.

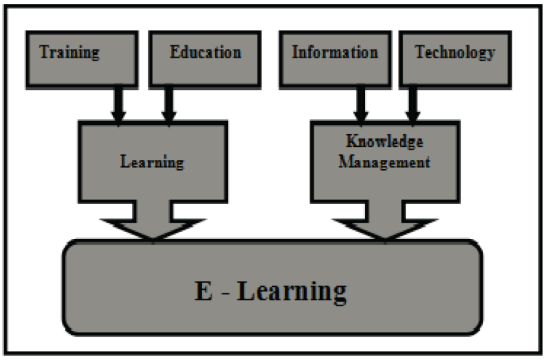
The basic concept of e-learning presupposes that electronic driven technologies can be used to facilitate and enhance learning process. For example, with the development of Internet technology in the 1980s and specifically, the World Wide Web in 1991, there was a surge of interest in the possibility of electronic learning being taken to a higher level. Initially distance learning was used to supplement existing classroom instruction but over time, electronic online classes are becoming primary form of interaction and information. For example, 50% of "Fortune 100"companies

in the world rely on web conferencing for their staff training. These types of programme can provide adults with a second chance in an adult, basic, vocational, high school, college or continuing education, reaching those disadvantaged by limited time, distance or physical disability, or updates the knowledge base of workers at their places of work. Secondly, the concept requires that learners take control of their learning, setting their own goals and determining which learning method to be used (Stephen Brookfield, 1987). Thirdly, e-learning is part of the more encompassing concept of Distance Learning, that is, the concept of providing students who are separated by distance and time, witnessed by students using electronic technologies. Fourthly, e-learning cuts across numerous fields of thought and practice. In other words, it is a multi-disciplinary concept encompassing an array of academics, training and education, learning and knowledge, technology and investigation of individual markets segment. From Figure 1, we can see that the trio of training, education and learning form one arm of the dual nature of concept of e-learning. These three that are the learning arm of e-learning are essentially the process of acquiring skill and knowledge either formally or informally. On the other hand, the trio of information, technology and knowledge management forms the other arm of e-learning that is all about technologies that will facilitate the learning arm of the concept.

Fifthly, from the analysis of Figure 1, it can be seen that the concept of e-learning can be seen from two major perspectives-*technology* and *learning* (knowledge). While greater emphasis is put into the technology aspect of e-learning, less effort seems to be put into the "learning process" which happens to be the main purpose and end product of e-learning.

From a business perspective, an aggressive and conservative forecast of business opportunities indicates that learning is expected to be a major product and services for many years to come, and e-learning will be deployed for this purpose.

Figure 1. Merging language and fields of interest



Finally, as the field is a fairly new one for study, the key concepts of e-learning and its understanding are still emerging. Therefore, any research attempting to study the strategies, effectiveness and efficiency of e-learning will involve multiple issues like:

1. Role of e-learning in knowledge and learning.
2. Contributions of e-learning to competent performance.
3. Its relationship to organizational transformation.
4. Strategies of including e-learning into other forms of electronic interactions.

Definitions

As a newly emerging concept, several definitions from different perspectives are advanced for electronic learning, more so a concept driven by a field of study such as information technology. From the beginning, e-learning was defined in relation to technology. In fact, as early as the 1980s, it was used mostly to mean learning delivered using any electronic means, especially computers. The United States Commission on Technology and Adult Learning defined e-learning as instructional content or learning experiences delivered or enabled by electronic technology (2001). On its part, the United Kingdom Department for Education and

Skills in 2003 states that "if someone is learning in a way that uses information and communication technologies (ICT) they are using e-learning". These definitions are broad and have not been accepted by all practitioners. Moving away from broad-spectrum definitions, some authors, in their definitions have specifically focused on the use of Internet technologies, which is too narrow.

Marc Rosenbery (2001) defines e-learning as the use of Internet technologies to deliver a broad array of solutions that enhance knowledge and performance. He argues that there are three fundamental criteria for e-learning:

1. It is networked, which makes it capable of instant updating, storage, retrieval, distribution and sharing of instruction and information.
2. It is delivered to the end user via a computer using standard internet and intranet technology.
3. It focuses on the broadest view of learning, learning that goes beyond traditional paradigms of training.

The term e-learning has thus come to encompass both the learning transaction and the technology used for producing and transmitting knowledge, with emphasis on the latter. Moreover, one needs to be aware that e-learning has also been defined in terms of its social context and its ability to offer learners the option of working outside structured educational environments. Doug Hum and Anne Ladoucour define it broadly as "using an electronic means to access information and learn about a topic, be it for personal interest, job at hand or career advancement (2001). Later, they refined their definition to training that takes place over a network, the internet or an intranet (2001).

From the definitions advanced so far, you can see that e-learning is typically defined in relation to its use and of specific technologies. The elements of these conventional definitions are:

1. Information and communication technologies.
2. A network, including use of the internet and the World Wide Web.
3. Delivery on time, at any time.
4. An electronic exchange of information for the purpose of learning.

However as you can see, the above definitions are potentially limiting because for many organizations, e-learning simply means a CD-ROM, DVD and applications loaded unto single computer for computer-based training or instruction. These organizations do need to use networks or web-based applications.

Hence, it is time to derive a foundational definition of e-learning, where following set of logical statements can be advanced to have a more comprehensive definition:

1. E-Learning encompasses any form of learning transacted by way of digital technologies.
2. E-Learning delivery systems are subject to the dynamics of socio-technological evolution.
3. E-Learning may be synchronous or asynchronous, self-paced or instructor-led, a process or a single event, online or offline, or any combination of these modes.

Thus, taking these statements into consideration and for the purpose of this chapter and on-going research, the broad definitions proposed of e-learning are:

1. "Electronic Learning can be defined as a learning experience involving the acquisition or transfer of knowledge delivered or transacted through electronic means".
2. "E-learning is an approach to build knowledge society through creation of knowledge management systems where the learning and learners are facilitated through electronic medium due to convergence of information, technology and communication".

Note: Again to restrict the definition of e-learning to Internet connection via networked computers is to ignore mobile devices and any emerging forms of ICT across all dimensions of the learning process. Restrictive definitions in terms of specific technologies are of limited long-term relevance to learning transactions in an electronic context. Hence any definition will be with reference to the time and will continue to change as technology is dynamic.

E-Learning vs. Concepts of Learning

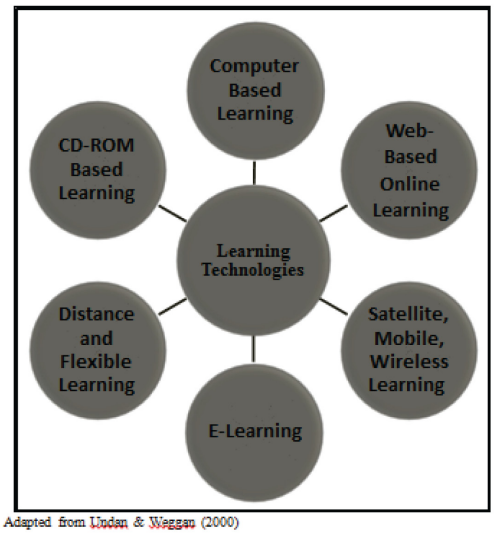
There are terms and concepts that are seemingly synonymous with e-learning, but are not necessarily the same. Such concepts and terms among others are Distance Learning/Education, Flexible Learning, Web or Online Learning/Training. E-learning has historically been linked with distance learning and flexible learning. In distance learning, various technologies can be used to link learners, instructors and resources that are separated in time and space. On the other hand, the main feature of flexible learning, as its name suggests, is its adaptability to learners need and circumstances. Burns *et al* (1997) defines flexible learning in terms of its flexible entry, course components, modes of learning and points of exit which offers the learner control and choice regarding the content, sequence, time, place and method of learning including flexible assessment processes.

According to Rosenberg (2001), while e-learning may be seen as a form of flexible and distance learning, not all flexible and distance learning necessarily involves e-learning. For example, in the National Open Universities, interaction between the students and the instructors at the study centers in a conventional classroom style is not e-learning. On the other hand, an interaction between the distance learner students of open universities and the instructional materials through CD-ROM, DVD, and Internet is considered an e-learning platform.

As shown in Figure 2, e-learning exists in a wider field of endeavour and has relationships that overlap with many different technologies. Meanwhile, some authors distinguish e-learning from web-learning (Beer, 2000), or web-based training (Horton 2000). These authors emphasize the distinctiveness of the web as an educational medium that can be used to transfer information and knowledge rapidly without restriction of time and location, and potentially at a lower cost than alternative educational media or environments (Beer 2005). Horton defines web-based training as any purposeful, considered application of web technologies to the task of educating a fellow human being (2002). But by and large, web learning still remains a subset of electronic learning because the web technology is electronic in function.

As one closely studies the historical association between e-learning and distance education, you will see there have been some unfortunate consequences. For example, e-learning programs have sometimes been criticized for being boring, poorly conceived and designed and unable to provide individuals with the knowledge they need.

Figure 2. Learning technologies modes and relationship



Source: Adapted from Lindan & Weggan (2000)

Similarly, distance learning and flexible learning are open to these criticisms. Many of these programmes have disappointed early hopes or promised more than they have delivered. E-learning seems to have inherited some of that legacy. Although the relationships between electronic learning and distance learning and flexible learning have been cordial, but in some instances there are problems between the two concepts. In some cases, online learning has been introduced to augment and improve existing practices, but in other cases the intention has been to clearly replace existing conditions with an electronic solution as a means of saving money. This seldom produces effective learning experiences and has led some education and training professionals to view e-learning with skepticism.

Assumptions of E-Learning

The basic assumptions about e-learning which prevail are:

1. Anytime, anyplace, any pace and speedily is one goal.
2. Provides access to learners not presently served in traditional settings and enhances learning opportunities.
3. Should be used as a strategic tool to support individual institutional missions but there are institutional structures and cultures that do not foster such an environment.
4. Requires resource sharing and collaboration among providers and it can be enhanced by many kinds of partnership.
5. Due to incorporated emerging information technologies, it provides both an opportunity and a challenge to adult educational institutions and corporate organizations to expand their missions.
6. Most effective when staff, along with learners, acquires new knowledge and skills. Thus, on-going staff development is essential part of the process.

Misconceptions of E-Learning

Some of the misconceptions of e-learning which exist in the globalized world are reviewed so that a part from the right image of e-learning being propagated, strategies adopted for e-learning will be apt for the borderless world.

1. **E-Learning Classes**: Especially online form of it, are fairly sterile and impersonal. But once a person starts to interact with other group members, they quickly discover that an online e-learning environment can be very rich and very personal. Participants often establish online friendships that outlast the particular class. Furthermore, people typically find that they are drawn into subject matter of the class much more deeply than in a traditional course of the discussions they get involved in.
2. **Electronic Online Learning:** Is only for people who have a lot of experience with computer skills to participate in online e-learning instruction, but certainly this is not true. One need not need to know very much about computer. With modern user friendly software, participating in an electronic learning does not require much more skill or technical know-how than what you need to operate any piece of office equipment like fax machine, copier, etc.
3. Classes are easier than conventional classes. But experience is usually otherwise. Adult learners and most participants find e-learning classes much more work, and much more rewarding, than traditional courses they have taken. Again this has to do with the thought of the subject matter those results from online electronic learning discussions. Such classes also require the self-discipline to do the preparation for participation and activities, homework is homework, whether offline or online.

4. **Improper Assessment:** It needs to be understood that almost any form of assessment or evaluation is possible with online e-learning classes. One can have traditional quizzes or tests with multiple choice questions or problems to be solved if desired; they can even be done with time limits. In fact, it seems that assignments and project that involve critical thinking, creativity, problem-solving and group interaction are more appropriate for online e-learning. The question of cheating always comes up with any form of online electronic learning since online activity is done in an unsupervised setting. To the extent that assessment involves assignment or projects unique to a given individual (or done in a team or group context); this is not likely to be a problem. Tests can also be made unique to each person, or they can be conducted in a supervised environment (like library or learning centre) if really necessary. Basically, if people are going to cheat, they will find a way, online or not. Assessing group performance in an online electronic learning setting is a little more difficult than evaluating individual efforts- particularly when people do team projects, with a single outcome representing the collective work of the group. Note that this is also true in traditional classroom settings.

STRATEGIES FOR INSTRUCTING AND LEARNING

Classroom teachers rely on a number of visual and unobtrusive cues from their students to enhance their delivery of instructional content. A quick glance, for example, reveals who is attentively taking notes, pondering a difficult concept, or preparing to make a comment. The student who is frustrated, confused, tired, or bored is equally evident. The attentive teacher consciously and subconsciously receives and analyses these visual cues and adjusts the course delivery to meet the needs of the class during a particular lesson. In contrast, the distant teacher has few, if any, visual cues. Those cues that do exist are filtered through technological devices such as video monitors. It is difficult to carry on a stimulating teacher-class discussion when spontaneity is altered by technical requirements and distance. Without the use of a real-time visual medium such as television, the teacher receives no visual information from the distant sites. The teacher might never really know, for example, if students are asleep, talking among themselves or even in the room. Separation by distance also affects the general rapport of the class. Living in different communities, geographic regions, or even states deprives the teacher and students of a common community link. However, more and more instructors feel the opportunities offered by distance education outweigh the obstacles. In fact, instructors often comment that the focused preparation required by electronic teaching improves their overall teaching and empathy for their students. The challenges posed by distance education are countered by opportunities to:

1. Reach a wider student audience.
2. Meet the needs of students who are unable to attend on-campus classes.
3. Involve outside speakers who would otherwise be unavailable.
4. Link students from different social, cultural, economic, and experiential backgrounds.

In developing or adapting distance electronic instruction, the core content remains basically unchanged, although its presentation requires new strategies and additional preparation time. Suggestions for planning and organizing a e-learning course include:

1. Begin the course planning process by studying distance education research findings.

There are several research summaries available (Moore & Thompson, 1990).

2. Before developing something new, check and review existing materials for content and presentation ideas.
3. Analyze and understand the strengths and weaknesses of the possible delivery systems available to you (e.g., audio, video, data, and print) not only in terms of how they are delivered (e.g., satellite, microwave, fiber optic cable, etc.), but in terms of learner needs and course requirements before selecting a mix of instructional technology.
4. Hands-on training with the technology of delivery is critical for both teacher and students. Consider a pre-class session in which the class meets informally using the delivery technology and learns about the roles and responsibilities of technical support staff.
5. At the start of class initiate a frank discussion to set rules, guidelines, and standards. Once procedures have been established, consistently uphold them.
6. Make sure each site is properly equipped with functional and accessible equipment. Provide a toll-free "hotline" for reporting and rectifying problems.
7. If course materials are sent by mail, make sure they are received well before class begins. To help students keep materials organized, consider binding the syllabus, handouts, and other readings prior to distribution.
8. Start off slowly with a manageable number of sites and participants as the logistical difficulties increase with each additional site.

Meeting Needs

To function effectively, learners must quickly become comfortable with the nature of teaching and learning at a distance. Efforts should be made to adapt the delivery system to best motivate and meet the needs of the learners, in terms of both content and preferred learning styles. Consider the following strategies for meeting learners' needs:

1. Assist in becoming both familiar and comfortable with the delivery technology and prepare them to resolve the technical problems that will arise. Focus on joint problem solving, not placing blame for the occasional technical difficulty.
2. Make students/learners aware of and comfortable with new patterns of communication to be used in the course (Holmberg, 1985).
3. Learn about students' backgrounds and experiences. Discussing the instructor's background and interests is equally important.
4. Be sensitive to different communication styles and varied cultural backgrounds. Remember, for example, that students may have different language skills, and that humor is culturally specific and will not be perceived the same way by all.
5. Ensure that learners take an active role by independently taking responsibility for their learning.
6. Be aware of learners meeting standards/deadlines, despite the lag time often involved in remote area or rural issues.

Development

Beginners may have some difficulty determining what the demands are because they do not have the support of an immediate peer group, ready access to the instructor, or familiarity with the technology being used for delivery of the electronic distance-education course. They may be unsure of themselves and their learning. Morgan (1991) suggests that distant students who are not confident about their learning tend to concentrate on memorizing facts and details in order to complete assignments and write exams. As a result, they end up with a poor understanding. Since distant learners need to become more selective and focused in their learning in order to master new

information. The focus of their learning needs to shift them from a "surface approach" to a "deep approach". The shift from "surface" to "deep" learning is not automatic. Brundage, Keane, and Mackneson (1993) suggest that adult students and their instructors must face and overcome a number of challenges before learning takes place including: becoming and staying responsible for themselves; "owning" their strengths, desires, skills, and needs; maintaining and increasing self-esteem; relating to others; clarifying what is learned; redefining what legitimate knowledge is; and dealing with content. The challenges which need to be dealt include becoming and staying responsible, owning one's strengths, desires, skills, needs, providing opportunities for students to share their personal learning maintaining and increasing self-esteem, dealing with content, relating to others, ensure clear directions and realistic goals for group assignments (Burge, 1993). Clarifying what is learned, and redefining what legitimate knowledge is also matters. Brundage, Keane, and Mackneson (1993) suggest that adult learners may find it difficult to accept that their own experience and reflections are legitimate knowledge. If the instructor takes a facilitative rather than authoritative role, students will see - their own experience as valuable and important to their further learning. Burge (1993) suggests having learners use first person language to help them claim ownership of personal values, experiences, and insights.

Teaching and learning as it is demanding and it becomes all the more for adults especially when they have to adapt to the technology based process. However, learning will be more meaningful and "deeper", if the learners and their instructor share responsibility apart from suitable and well designed strategies. The next section deals with e-learning in organizations where the core of learning is for application primarily referred to as training and development. Before that a quick bird's eye view of what is the uniqueness about e-learning vis-à-vis traditional learning is given in Table 1.

Even though several studies have shown that the average retention rate based on traditional learning is about 58% while in the case of e-Learning it is higher, thus achieving 72.5 to 92.8%, there are still some barriers to virtual training. These barriers are almost always associated with presential training: some people are afraid of changing to a new methodology. More than fear, it is about breaking old and sometimes very rooted paradigms. For instance, with e-Learning it is not necessary for a teacher to be in front of students so that they can learn; there is no need to attend "classes;" there is no need to leave the office or organize events at hotels to share experiences; expert knowledge can be obtained and transferred through electronic means…therefore, it is understandable that for conservatives this means a significant change. However, it is a challenge that needs to be faced to maintain competitive advantage.

E-LEARNING IN CORPORATE ORGANIZATIONS

Most corporate organizations pay lip service to some form of training, whether e-learning or in the classroom, but intensifying competitive pressures

Table 1. Old and new learning paradigms

Traditional Courses	e-Learning
The approach is the teacher	The approach is the student
More passive	More active
Instructors impart knowledge	Teachers guide students and provide good learning practices
Verbal communication, student participation	A greater percentage of students actively participate during online discussions
Technology does not play a key role	Technology helps students explore resources and build their own ideas
The major means is a lecture class based on written material	Technology can help instructors find a greater variety of learning styles

are now forcing them to look hard at ways of using new technology in the learning process. E-learning is changing the way corporations organize and manage training. In the past, IT was delivered separately from other training skills. Non-IT topics, such as finance, management, employee orientation, and product information are being delivered through common e-learning systems. Some pioneer corporate organizations are well advanced in the use of e-learning, while others show varying degree of interest and many remain to be convinced. Yet despite the illusion caused by past hypes, there is a growing sense among executives and analysts and that e-learning- the use of IT and the Internet to enhance training- is a market with a huge potential. Corporate e-learning is one of the fastest-growing sectors within the education market. E-learning is moving out of the early technology phase into a more mainstream business market. As well as connecting employees through e-learning, companies can also link up with partners, suppliers and customers. Huge benefits will accrue when content flows seamlessly – often over mobile networks-through industry value chains (KPMG Consulting, 2002).

Statistics has been used to illustrate the trend and growth in e-learning in corporate organizations. The forecast for the global e-learning market of 2002 was put at about $4.2billion by Gartner an IT analyst group. For the year 2004, IDC, the market research company forecast the global e-learning market was worth some $23billion, while Gartner group puts the 2005 projected figure at $33billion. E-learning still has far to go, however, with experts variously describing it as the toddler or pre-adolescent stage.

At present it is only a small part of the overall global training market of more than $100billion. But according to Gartner group, by the middle of this decade it will make up almost one-third of all training deployed. Executives of corporate organizations are offered increasingly flexible courses of life-long learning within their own companies as the estimated 2,000 corporate universities expand towards 3,700 at the end of the decade.

Benefits of E-Learning in Corporate Organizations

As corporate leaders try to leverage the value of the value of their worker's ability to learn on the job and re-skill for new ones - the Internet provides new tool, not just a faster and less costly way of delivering the old training programmes. Also, an awareness of the tangible business benefits, as indicated by the statistics, is part of what drives the corporate e-learning market. Some of the benefits include:

1. **Speed:** Since IT has been used to speed up and streamline most aspects of business, it has also been applied to the often complex and costly process of training and e-learning is the ideal model for that purpose, now. Companies use e-learning to bring employees up to speed on new products, sales methods, financial practices or regulatory requirements.
2. **Savings:** Saving money is also an attraction for e-learning in the corporate training, if executed properly. For example, a client of Fuel, (an e-learning provider), a major telecommunications company saved 1.3million pounds on a course for one product by using e-learning. The course that involved substantial spending on equipment would have cost 1.4milion pound, but using e-learning and the creation of ' virtual' versions of the equipment cost just 100,000 pounds. But savings should not be considered as the main factor for adoption of e-learning in corporate place. It cannot be the only reason for e-learning or

Table 2. Global e-learning market

Year	Value ($ billions)	Forecast Group
1999	1.7	IDC
2002	4.2	Gartner
2004	23.0	IDC
2005	33.0	Gartner

it will fall. Seeing the potentials in e-learning, the IT giants are eager to gain a big slice of the IT market. IBM has a head start, having already achieved annual savings of well over $200million by adopting e-learning for its own activities.

3. **Flexibility:** E-learning, especially so called asynchronous or learning, offers companies a way of delivering training in a very flexible way. It helps companies rethink the way to assess, source, deliver, evaluate, manage the development of their staff at all levels, making the process, easier, faster and more effective.
4. **Skills Training:** E-learning process is being used for staff training in the skills needed for today's volatile and fast moving markets. There is a desperate need to transfer skill quickly, and e-learning is a veritable concept for this purpose.
5. **Access:** E-learning via the internet is advantageous in that it enables people to access up-to-date information as they perform important tasks. The concept of e-learning is changing from a course, consisting of 20 minutes to an hour of continuous material, to a 'learning object' which may be a few seconds to a few minutes of material. For example, a new employee might access a series of learning objects through very structured series of courses designed to explain the company and its products. Alternatively, an existing employee might use one of those same 30 seconds learning objects to help them solve a peculiar problem.

Issues in E-Learning for Organizations

The shape of the new market is, however, confused, both geographically and in terms of content, and there are a series of hurdles still standing in the way of a fully integrated e-learning industry. Language is the first big barrier, but technological advances may make expansion possible. For example, a company Cathay Pacific Airways is using a system called EKP to train 14,000 employees. The system can handle double-byte character set languages, such as Chinese and Japanese, as well as western languages such as English and French. Second is the growing demand for comprehensive e-learning programmes with full service back-up, including online technical support and increasingly, tutorial and mentor services. This is all about creating the community aspects which are taken for granted in the classroom. It is about support-mentoring, web help-desks, expert answers, and 'pushing and pulling' the learner.

Strategic Aspects

Organizations are beginning to understand the fact that though e-learning could bring about savings and some other benefits highlighted above, the critical factor for adoption of e-learning is its ability to meet the corporate goals and objectives as well as making employees more productive. This means training and development should be managed along a company's overall strategy and performance, not as something apart from the main activities. Corporate organizations are advised to think long and hard about what they want to achieve from e-learning. The ground work takes time. For example, IBM a big player in the fragmented e-learning market encourages corporate organizations to carry out strategy study before taking any action, that is, e-learning should be viewed as an essential part of corporate strategy and not just as a fix for a problem.

Once organizations have decided what they want to achieve, businesses should think about content, the mix between online and classroom-based training, the type of IT systems and architecture they need and whether they want to outsource all or part of the process to outside experts. Most importantly they most consider how training ties in with their performance objectives. They need to see e-learning as part of the way to do business

not in isolation. This approach is in line with the greater focus on return on investment as companies consider how to get the most out of the large sums they have spent on IT in the past decade. Corporations are now being encouraged to view their training activities from a broader perspective, so that these are integrated into their business. There is greater emphasis on tying learning to critical business goals. Learning is becoming a part of consolidated approach to performance enhancement. Some companies see this but many are not yet there. But sooner other companies will begin to pay attention to the benefits of e-learning.

Economics of E-Learning

In the modern corporate organizations, there is hardly anybody that does not need to learn something about something, so the market for e-learning and learning management software is growing very fast.

The economics of e-learning are compelling because it reduces travel and material distribution costs and delivers content that is always up-to-date. The general believe is that e-learning over the Internet will be more successful than the e-learning of computer-based training (CBT) which preceded it. This is because the former requires only a web browser with standard multimedia extensions. CBT was more difficult to deploy, requiring compact disk player and proprietary software to be installed on each desktop computer. The learning management software market does not provide the training content, but the complete infrastructure required to use it. This includes user profiles, skills assessment, registration content delivery, training resource management, examination and so on.

A critical element is correlation tools that connect the learning activities with the organization's core business system in order to show the business impact in learning activities. The training manager cares about the traditional learning metrics of hour per employee or dollars per employee. However, chief executives only care about how training has impacted revenue, costs, and market share or customer satisfaction. The e-learning tools will demonstrate whether a salesman sells more products or the call center agent answers calls more quickly. Content can be delivered by a link to third party websites with which the organization has a contract. Some of these provide no feedback and others use industry standards interfaces that should back on the employees' progress and results to the learning management systems. Although most content is run directly from the web, in low bandwidth environments it can be combined with a compact disk for audio and video that does not change frequently. Synchronous software also allows learning material to be downloaded to a portable computer and the progress and results uploaded to the server later. The high point in the e-learning market has historically been in customer facing application such as training customers, distributors, resellers, sales, and customer support and field service personnel. This radically changes revenue, as well as reducing the cost of customer support and field service.

E-learning is now spreading to manufacturing to improve the quality of products, to human resources for basic skills training and for employee training in topics like filing in travel expenses. The use of e-learning for formal qualifications varies by industry. In the financial services and pharmaceuticals industries, it is nearly 100 per cent, because of the regulatory requirements. In high technology it is only 15-20 per cent, which is mainly certification programme for resellers. If employees undertake external training for their own benefit, the software will still track how effective it is to determine if it should be made more widely available. The employee's complete learning profile can also be captured in one place.

When establishing an e-learning program, one of the first things considered is the cost of the system. Several cost components factor into the design of an electronic system (Threlkeld & Brzoska, 1994):

1. **Technology:** Hardware (e.g., videotape players, cameras) and software (e.g., computer programs).
2. **Transmission:** The on-going expense of leasing transmission access (e.g., T-1, satellite, microwave).
3. **Maintenance:** Repairing and updating equipment.
4. **Infrastructure:** The foundational network and telecommunications infrastructure located at the originating and receiving campuses.
5. **Production:** Technological and personnel support required to develop and adapt teaching materials.
6. **Support:** Miscellaneous expenses needed to ensure the system works successfully including administrative costs, registration, advising/counseling, local support costs, facilities, and overhead costs.
7. **Personnel:** To staff all functions previously described.

Although the costs of offering distance education courses may be high, there are high costs associated with offering conventional courses. Benefits of e-learning courses to the learner include:

1. Accessible training to and in rural areas.
2. Completion of course of study/training without suffering the loss of salary due to relocation.
3. Learners/Students are exposed to the expertise of the most qualified faculty.
4. As programmes become more efficient; program costs should decrease (Ludlow, 1994).

A classical model for those working in the training field is the one developed by Donald Kirkpatrick many years ago. That makes it possible even today to assess both traditional training delivered by an instructor in a classroom, as well as e-Learning that can be delivered using the Internet, Intranet or CD- ROM. This model is composed of four progressive levels (see Table 3):

According to Strother, there is an added level (level V) related to the Return on Investment or ROI, which should include a cost-benefit analysis. In this regard, using the evaluation data, the results are converted into monetary values and then compared with the cost of the training program in Level V.

E-Learning Benefits

Very often we hear statements about the importance of knowledge as a critical success factor for organizations in the global economy. Even though almost every firm is aware of the significance of knowledge, at times only some firms are clear about how to successfully manage and disseminate knowledge, and even more important, how to transform it into a source of better operating results. Organizations that have used knowledge to improve results are aware that in order to use it successfully, it should entail greater scope and not only use it to inform associates; it should transform abstract ideas and concepts into concrete and tangible experiences leading to results and improved productivity. A study by Monash University from Australia involving 183 organizations, found that they have chosen e-Learning primarily as a way to reduce training expenses, make training processes more flexible, and provide a greater organizational scope. They also mentioned the ability to provide just-in-time training, that is, at the right moment

Table 3.

Levels	Steps	Follow-up
Level 1	Reaction	How do learners feel?
Level 2	Learning	What did they learn?
Level 3	Behavior	Are they transferring the learning to their job?
Level 4	Results	How much does the training affect the company's bottom line?

for the employee. In the same study, organizations were asked why they were using e-Learning. As the most common uses, they mentioned personal productivity tool training and skills for specific job processes and procedures, and training for most organizational jobs; therefore, large audiences were involved.

Courses on organizational guidance, employee induction and policies and mandatory training related to their activities account for significant e-Learning uses in these organizations, mainly because the training should be taken more than once a year. There is also the existence of technical skill courses (mainly for information technology and technological infrastructure maintenance staff). Specific skill courses for different jobs also account for the most common e-Learning uses; among them we can find courses to improve customer service and sales force effectiveness, management skills, both practical and theoretical, and skills to improve manufacturing and certification processes.

Many times there is significant transformation that has made organizations rethink e-Learning not as an innovating technology but rather as a tool to improve operating performance. Many organizations, e-Learning is used as a way to substitute traditional training processes to improve critical skill and knowledge dissemination thus leading to logistics and economic rewards. With these results, it is reasonable to forecast that e-Learning implementation in the organizations will follow the patterns of successful organizations in developed markets: that is a greater number of firms will be taking advantage of e-Learning and as the there is a greater internal penetration it will allow more learners, departments, and business processes to take advantage of technology as well.

KNOWLEDGE MANAGEMENT IN TODAY'S ORGANIZATION

It is increasingly common to listen about organizations creating knowledge at an unprecedented speed, and it is even more surprising to know that in a few years mankind will double all the knowledge accumulated throughout history in an endless circle. Hence, knowledge optimization and its strategic significance are ever increasing. It is also amazing to see how technological development forces, competition, and globalization significantly accelerate this process. In view of this situation, organizations are forced to manage –besides fixed assets, capital, and workforce - knowledge resources, information, and learning. In many organizations, particularly in the service sector, knowledge is becoming a more important competitive advantage factor than financial or material goods that have been formerly relevant. Board of directors in modern organizations has a strategic priority: using knowledge as a competitive advantage. These priority states guidelines for the organization, particularly for human resources, aimed at capitalizing on knowledge developed by the organization throughout time for result achievement.

Transforming the organizational guideline into departmental action plans—Human Resources role

The main Human Resources challenge involves transforming organizational guidelines into concrete plans aimed at knowledge capitalization and result achievement. This challenge is combined with the fact that knowledge is not necessarily the same for the entire organization. Knowing the mission, vision, and some labor issues can be a requirement for the entire organization, but each department will have individual needs and will be evaluated differently. For example, sales employees will have to know product or service characteristics, differentiate them versus the closest competitors, and learn good sales practices derived from the most successful experienced

salespeople in the organization. On the other hand, production employees should know how to make the product, and avoid errors, losses, and labor accidents.

Therefore, by looking at the different organizational departments as a whole, the Human Resources department has a very complex task involving the organization of:

1. Different departments and business areas.
2. Different learning objectives and topics.
3. Different individual skills and abilities.
4. Different evaluation methods.
5. Different geographic location.
6. Different individual time availability.
7. Limited training budget.

Moreover, the organization demands immediate results from Human Resources. It is important to remember that in a global world, organizations should be able to achieve results at the fastest speed possible. So the question is: Can Human Resources manage this complexity? Some visionary Human Resources departments have relied upon technology to find help in such a complex task. And it makes a lot of sense: other organizational departments are already using technology to streamline and reduce costs in less complex tasks than those of Human Resources. There are technological solutions aimed at solving the complexity resulting from organizational knowledge transfer known as Learning Management Systems (LMS). LMS drastically reduces costs and complexity resulting from knowledge transfer in the organization. Moreover, it helps the Human Resources department focus on giving purposes, sense, and relevance to learning initiatives thus relieving this department from the repetitive, tedious, and burdensome tasks related to knowledge manual management. Thanks to easy implementation, management, and coverage, LMS-managed training initiatives have continuity throughout time thus giving access to training across the organization while meeting individual employee learning needs.

Knowledge, Technology, and Competitiveness

A variable that increases exponentially is a variable where growth is proportional to its magnitude, in other words, the higher the value of the variable, the faster its growth. To understand technological advances in the XX century and at the beginning of the XXI century, we use some variables that grow exponentially. Among these variables, we see three major trends that are drastically transforming the playing field: an increased number of transistors in an integrated circuit at the same price, the ability of the human race to generate knowledge and the ability of society to adopt new technologies. In the area of technology, one of the best-known examples of a variable that grows exponentially is Moore's Law, which indicates that the number of transistors in an integrated circuit (a good indicator of the processing power of a computer) doubles every 18 months at the same price. The implications of Moore's Law go beyond a laboratory. This means that during the 50s we were able to buy for about $1,000 (constant) the processing power equivalent to 1 operation per second; 25 years later, in 1975, we were able to buy for the same price, the processing power of about 1 million operations per second, and in 2000, for the same price, the processing power a billion operations per second. If this trend continues (and there is no evidence that it will stop in the foreseeable future), in 2025 the forecast is that we will be able to buy, for $1,000, a machine with a processing power equivalent to the human brain, and in 2050, for the same price, the processing power will be equivalent to 6,000 million human brains, equivalent to the present total population of the Earth.

Second, the number of patents granted annually, such as the usufruct on processes, devices, ideas, or creations that are new and clever and can somehow be commercially used, is usually seen as a good indicator of the amount of useful knowledge being generated by mankind. Towards the end of the XIX century, the United States

granted 10,000 to 15,000 patents a year; in 1990 around 100,000 patents were granted annually, and nowadays, around 200,000 patents a year are granted. The above is evidence of the capacity of the human race to generate knowledge that also has an exponential growth. If in a world where the computing power and the capacity to generate knowledge are exponentially growing, the question before us is: is society able to adopt this knowledge fast enough? In other words, are you and I learning enough and at a pace that will prevent us from becoming ignorant in less than a decade? Another issue is also the speed at which the society is taking advantage of technological changes (are we taking advantage of the computer advance potential fast enough!). No doubt the technological assimilation capacity has increased with the net generation. Society has shown an impressive capacity to adopt new technologies at a pace that is growing exponentially. If in 1950, it took 25 years for 25% of the population to have a television set, the time to achieve the same penetration level for the personal computer or PC was about 15 years in the 80s and less than 6 years for the same penetration level in the case of the Internet in the 90s. So far, it seems that the transformation capacity of a human being at an accelerated pace to keep up with the changing world, in the case of the computer power and knowledge generation, has been relatively good.

However, it is also evident this will not be possible at least based on traditional learning methods. If exponential growth will make a $1000-computer to have the processing power of a human brain from 2025 as earlier stated, then during the XXI century, the human race will be able to generate 1000 times more knowledge than during the XX century. Therefore, we are entering an age in which there is a compulsion to change the way we do things simply to prevent us from becoming obsolete. Some sort of Internet access is available to everybody. A computer whose price is less than $1,000 is very common, and it seems that there will soon be computers for $100. A short time ago, communicating with a friend living in another continent implied a phone call or a letter that took days to arrive. Today, we can make free phone calls on the Internet, and an email takes milliseconds to travel around the planet.

Small and medium-sized enterprises (SMEs), that a short time ago depended on intermediaries, can today participate in truly global markets by selling directly to buyers and attaining better terms and conditions. The traditional travel agency is being replaced by online reservations and electronic tickets. The borders between countries are becoming blurred. Technology has allowed for an accountant in India to do taxes for a client in Europe; for a security expert based in any country to check a bank's information system network in New York, and for the software developer based in Costa Rica to work for a firm in California. This transformation is the result of a technological explosion and the knowledge economy. It is evident that technology has had an impact on the way we do business, communications, and trade.

Solutions and Recommendations

However, it is not clear what technology has done for education, learning and development. Fast changes in other are seen but there are not descriptive education variables whose curves are exponentially growing. One of the major technological innovations took place about 120 years ago when the first blackboard was invented; the teacher had a relatively effective mechanism to transmit information to several students at the same time and graphically. Several decades after came the slide projector, then the multimedia projector, and more recently, Powerpoint. It should be pointed out that the speed to introduce the latest innovations of educational mechanisms has been increasingly fast. However, the quantum leap has been recently. For the first time since the introduction of the blackboard 120 years ago, a major educational innovation was introduced: referred today as e-Learning or computer-assisted learning.

e-Learning uses a computer to give instructions in the most personalized, fun, interactive, and challenging fashion possible thanks largely to the convergence of three major trends that were mentioned at the beginning: the large computer power, the capacity of people to assimilate new technologies and use them in their daily life activities and finally, the vast amount of things to learn on a daily basis in order to survive during the knowledge age.

E-Learning has the better of two worlds: the best of pre-essential learning led by experts with the highest levels of knowledge and a high capacity to teach, and the best of information systems, multimedia, Internet, and telecommunications. Technology-assisted instruction has two major benefit cornerstones: the first is related to resource efficiency (it is known fact that resources are becoming scarce) because training costs per student are drastically decreasing, mass scalability (the ability to train thousands and thousands of students), centralized technology-assisted management, and finally, flexible training schedules and locations. The other cornerstone has to do with students and their ability to learn: with e-Learning the student will have a direct contact, with no intermediaries, with the knowledge generated by the best experts based on the best approaches and with the most consistent message. The flexibility will allow training processes to be just in time where they are most needed, and when due to reasons beyond student control, the processes will indicate what topics to train. Students will have a rich, interactive, funny, and challenging experience which increases satisfaction levels. During the training, they learn while interacting with other people, playing, exploring, and building their relevant contextual knowledge. All these technological and methodological virtues are combined to create a more effective learning experience, with higher knowledge retention and a higher application of knowledge on each student's daily tasks. In the 80s, Internet nodes (interconnected computers or routers in a network) increased from 20.000 to 80.000, and not everybody (besides university researchers) was aware of this growth. But in the 90s, Internet nodes increased from 20 million to 80 million, and this transformed the world completely and forever. A few people were able to foresee the Internet explosion and be ready for it. At this moment, there are clear signs of an explosion of knowledge and learning technologies.

For the first time in three years, technology-assisted instruction exceeded traditional instruction at a corporate level based on the reports by the American Society for Training and Development. Another study, also at a corporate level, indicates that learning budget allocated exclusively to e-Learning accounts for a third of the total training budget. Formal education processes (schools, high schools, universities) are generally lagging behind in the use of technology as compared to the corporate world, probably because companies are under a higher pressure to train faster and with relevant and contextual contents and just in time and at a lower cost. But the trends are irreversible. One cannot forget about these trends and that e-Learning could experience the same explosion the Internet nodes experienced in the 80s. Hence, almost every global large corporation use e-Learning to train personnel. All the corporations have recognized that knowledge and the ability to apply it on daily life activities represent a source of competitiveness and survival. For medium-sized organizations, this is not very evident, and it is even less evident in small organizations. This is a serious issue because in this knowledge age; a person who has good knowledge at the right time will have a better chance to be successful. But if small organizations do not use the power of knowledge to compete with big companies, it will be a case of "tied sheep against a loose wolf" situation in terms of competitiveness and survival. In the face of the fierce competition in the increasingly global and demanding markets and with the understanding of the role of knowledge in the new productive processes, it is time to aggressive propagate and educate to create and transform knowledge based on e-Learning to become more competitive.

Thus, it seems that e-learning is one of the most important technological advancement for education, learning and development since the invention of the blackboard 120 years ago and is going to transform organizational competitiveness in the borderless world.

FUTURE RESEARCH DIRECTIONS

Organizations sometimes pay lip service to training, but intensifying competitive pressures are now forcing them to look hard at ways of having effective strategies for human resource development and training. Organizations will sooner or later have to relook at the existing strategies and work out for e-learning strategies to adapt to the borderless world. The areas where studies need to be undertaken include the matching and identification of training needs across the board and borders, understanding the cultural aspects of learning and integrating the cultural aspects of learning with technology apart from how to help individuals and learners to learn-delearn-relearn in an effective manner.

Coomey and Stephenson (2001) found little if any definitive evidence of the overall effectiveness of 'e-learning' compared with more conventional methods. This is not to say that this medium is ineffective but rather to say that there is little systematic and empirical work to show evidence of its evaluation. The vast and growing bulk of information now available about e-learning, both in print and online has focused on the potential of technology or the enthusiasm of its users and lacked the pedagogical guidance stemming from research that would inform the processes of online course development, review and moderation. In accordance with this Goodyear (2001) noted: "the literature on learning in higher education is surprisingly quiet with respect to what both lay people and practitioners might expect to be a key construct". Steeples and Jones (2002) also reported: "the big lesson about technology and learning from the 20th century is that less is known about how people learn than many educational researchers are inclined to admit". Thus the key issues revolve around the nature and the components of effective teaching and learning and are pointing towards the need for establishing the pedagogies of e-learning or e-pedagogy and presenting research based recommendations for the e-pedagogues. It becomes more evident that there is a great need for a pedagogical assessment of online teaching and training. This dearth of content analysis is due to the time required to perform such analyses (Hara, Bonk and Angeli, 2000) and researchers still lack a reliable instrument or an analytical framework to analyse the online discussions. Goodyear (2001) noted: "Analyzing the content of networked learning discussions is a troublesome research area and several commentators have remarked on the difficulty of connecting online texts to discourse to learning"

Furthermore, the critical factor for adoption of e-learning is its ability to meet the corporate goals and objectives as well as making employees more productive. Organizations now need to view their training activities from a broader perspective, so that these are integrated into their business. There is greater emphasis on tying learning to critical business goals.

CONCLUSION

The subject of Electronic Learning (E-Learning) has become pertinent in the dynamic world of today which is driven by information technology. The global economy has not been left out of the positive impacts of e-learning especially in the corporate world where e-learning has reduced the cost of training of personnel. The basic concept of e-learning presupposes that electronic driven technologies can be used to facilitate and enhance learning process. E-learning has come to be a form of bridge for those who did not have the first time opportunity to formal education. Not

only this, it has cut down on the time and money spent in corporate training. We see the continual emergence of e-learning and being able to "bite" into the big pie of corporate training valued at $100billion. Though there are some lapses associated with the full implementation of e-learning, the benefits derived from it far outweigh the challenges. Part of the core value of e-learning is that learning is a life-long process, important to successful participation in the social, cultural, civic, and economic life of the society. There is an expectation of a significant consolidation in the e-learning market as large companies' increase their penetration and smaller ones are swallowed up or find the going too tough. Their success, whatever their size, will depend on how many companies can be persuaded not just to test the waters of the e-learning market but to take the plunge.

REFERENCES

Barron, A. E., & Ivers, K. W. (1996). *The internet and instruction: Ideas and activities*. Englewood, CO: Libraries Unlimited..

Barron, A. E., & Orwig, G. W. (1997). *New technologies for education: A beginner's guide*. Englewood, CO: Libraries Unlimited..

Boettcher, J. (1997). *Pedagogy and learning*. Tallahassee, FL: Florida State University..

Bukowitz, W. R., & Williams, R. L. (1999). *The knowledge management fieldbook*. London: Prentice Hall..

Casey, P., Dager, N., & Magel, M. (1998). Emerging technology: Tools for today and tomorrow. *AV Video Multimedia Producer*, *20*(1), 44–53.

Collis, B. (1996). *Tele-learning in a digital world*. London: International Thomson Computer Press..

Coomey, M., & Stephenson, J. (2001). Online learning: It is all about dialogue, involvement, support and control—According to the research. In *Teaching and Learning Online: Pedagogies for New Technologies*. London: Kogan Page..

Distance Learning: A Primer. (1997). Retrieved from http://www.mountainlake.org/distance/primer.htm

Egan, M. W., Sebastian, J., & Welch, M. (1991). *Effective television teaching: Perceptions of those that count most...distance learners.* Paper presented at the Rural Education Symposium. Nashville, TN.

Feeley, J. (1997, August). Wideband web. *Digital Video,* 42-48.

Franklin, N., Yoakam, M., & Warren, R. (1996). *Distance learning: A guidebook for system planning and implementation*. Bloomington, IN: Indiana University..

Goodyear, P. (2001). Psychological foundations of networked learning. In *Networked Learning: Perspectives and Issues*. Berlin: Springer..

Hansen, N. (1998). *Save the beaches 1998: An international project for global awareness*. Retrieved from http://ednhp.hartford.edu/www/Nina/

Hara, N., Bonk, C. J., & Angeli, C. (2000). Content analysis of online discussion in an applied educational psychology course. *Instructional Science*, *28*, 115–152. doi:10.1023/A:1003764722829.

Hong, J. C., & Kuo, C. L. (1999). Knowledge management in the learning organization. *Leadership and Organization Development Journal*, *20*, 207–215. doi:10.1108/01437739910277019.

Liu, Y., & Wang, H. (2009). A comparative study on e-learning technologies and products: From the east to the west. *Systems Research and Behavioral Science*, *26*, 191–209. doi:10.1002/sres.959.

Martensson, M. (2000). A critical review of knowledge management as a tool. *Journal of Knowledge Management*, *4*, 204–216. doi:10.1108/13673270010350002.

Minoli, D. (1996). *Distance learning technology and applications*. Boston, MA: Artech House..

Moore, M. G., & Thompson, M. M. (1990). *The effects of distance learning: A summary of the literature*. University Park, PA: The Pennsylvania State University: American Center for the Study of Distance Education..

O'Neill, M., & McHugh, P. (Eds.). (1996). *Effective distance learning*. Alexandria, VA: American Society of Training and Development..

Parker, A. (1997). A distance education how-to manual: Recommendations from the field. *Educational Technology Review*, *8*, 7–10.

Ponce, D. (2003). *What can e-learning learn from knowledge management?* Paper presented in 3rd European Knowledge Management Summer School. San Sebastian, Spain. Retrieved from http://www.knowledgeboard.com

Porter, L. R. (1997). *Creating the virtual classroom: Distance learning with the internet*. New York: John Wiley & Sons, Inc.

Roknuzzaman, M., Kanai, H., & Umemoto, K. (2009). Integration of knowledge management process into digital library system: A theoretical perspective. *Library Review*, *58*(5), 372–386. doi:10.1108/00242530910961792.

Salvador, R. (1996). What's new in net connectivity? *Electronic Learning*, *16*(1), 14.

Schutte, J. G. (1996). *Virtual teaching in higher education: The new intellectual superhighway or just another traffic jam?* Retrieved from http://www.csun.edu/sociology/virexp.htm

Steeples, C., & Jones, C. (2002). *Networked learning: Perspectives and issues*. London: Springer-Verlag London Limited. doi:10.1007/978-1-4471-0181-9.

Stephenson, J. (2002). *Teaching & learning online: Pedagogies for new technologies*. London: Kogan Page Limited..

Thornburg, D. D. (1995). Welcome to the communication age. *Internet Research, 5*(1), 64-70. Willis, B. (1995). *Distance learning at a glance.* Retrieved from http://www.uidaho.edu/evo/distglan.html

Verduin, J. R., & Clark, T. A. (1991). *Distance education: The foundations of effective practice*. San Francisco, CA: Jossey - Bass Publishers..

Wild, R. H., Griggs, K. A., & Downing, T. (2002). A framework for e-learning as a tool for knowledge management. *Industrial Management & Data Systems*, *102*(7), 371–380. doi:10.1108/02635570210439463.

ADDITIONAL READING

Andrew Fisher (2001). A Better Way to Learn.

Collison, G. et al. (2000). *Facilitating Online Learning: Effective Strategies for Moderators*. Madison, WI: Atwood Publishing..

Conrad, R., & Donaldson, J. A. (2004). *Engaging the Online Learner: Activities and Resources for Creative Instruction*. Jossey-Bass..

Goodyear, P. (2001). Psychological Foundations of Networked Learning. In C. Jones, & C. Steeples (Eds.), *Networked Learning: Perspectives and Issues Springer*. Surrey, UK: Godalming..

Hanna, D., Glowack-Dudka, M., & Conceicao-Runlee, S. (2000). *147 Practical Tips for Teaching Online Groups: Essentials of Web-Based Education*. Madison, WI: Atwood Publishing..

Hara, N., Bonk, C. J., & Angeli, C. (2000). Content Analysis of Online Discussion in an Applied Educational Psychology Course. *Instructional Science*, *28*, 115–152. doi:10.1023/A:1003764722829.

Harvard Business School Publishing. (2004). *Coaching and mentoring: How to develop top talent and achieve stronger performance*. Boston: Harvard Business School Press..

Iverson, K. M. (2005). *E-Learning games*. Upper Saddle River, NJ: Pearson Prentice Hall..

Jim Kelly (2001). E-Learning on Course for Strong Growth.

Johnson, W. B., & Ridley, C. R. (2004). *The elements of mentoring*. NY: Palgrave Macmillan..

Ko, S., & Rossen, S. (2003). *Teaching Online: A Practical Guide* (2nd ed.). Houghton Mifflin Co.

Krug, S. (2000). *Don't make me think: A common sense approach to web usability*. Indianapolis: Macmillan..

Laurillard, D. (1993). *Rethinking University Teaching*. London: Routledge..

Morrison, G. R., Ross, S. M., & Kemp, J. E. (2004). *Designing effective instruction*. John Wiley & Sons, Inc.

Palloff, R. M., & Pratt, K. (2001). *Lessons from the Cyberspace Classroom: The Realities of Online Teaching*. San Francisco: Jossey-Bass..

Richardson, W. (2006). *Blogs, wikis, podcasts, and other powerful web tools for the classroom*. Thousand Oaks, CA: Corwin Press..

Rod Newing (2001). Compelling Economics of Web-Based Training.

Schank, R. (2001). *Designing World-Class E-Learning: How IBM, GE, Harvard Business School, And Columbia University Are Succeeding At E-Learning*. McGraw-Hill..

Shea, G. F. (1999). *Making the most of being mentored: How to grow from a mentoring partnership*. Menlo Park, CA: Crisp Publications..

Shea-Schultz, H., & Fogarty, J. (2002). *Online learning today*. San Francisco: Berrett-Koehler Publishers..

Steeples, C., & Jones, C. (2002). *Networked Learning: Perspectives and Issues*. London: Springer-Verlag London Limited. doi:10.1007/978-1-4471-0181-9.

Stephenson, J. (2002). *Teaching & Learning Online: Pedagogies for New Technologies*. London: Kogan Page Limited..

Watkins, R. (2005). *75 e-Learning Activities: Making Online Learning Interactive*. John Wiley & Sons, Inc.

Weiss, R., Knowlton, D., & Speck, B. (2000). *Principles of Effective Teaching in the Online Classroom*. San Francisco: Jossey-Bass..

KEY TERMS AND DEFINITIONS

Borderless World: A borderless world in business is a global economy in the age of the internet that is thought to have removed all the previous barriers to international trade.

Effectiveness: Effectiveness implies the skillful use of resources or energy or industry to accomplish desired results with little waste of effort.

E-Learning: Electronic learning (or e-Learning or eLearning) is a type of education where the medium of instruction is computer technology. In some instances, no in-person interaction takes place. It can be defined as a planned teaching/learning experience that uses a wide spectrum of technologies, mainly Internet or computer-based, to reach learners.

Knowledge: Acquaintance with facts, truths, or principles, as from study or investigation; general erudition, familiarity or conversance, as with a particular subject or branch of learning including acquaintance or familiarity gained by sight, experience, research or report.

Knowledge Management: Refers to techniques used for the systematic collection, transfer, security and management of information especially within organizations, along with systems designed to help make best use of that knowledge.

Learning: The process of acquiring knowledge, skills, attitudes, or values, through study, experience, or teaching and research, that causes a change of behavior.

Learning Management Systems: "Learning Management" is the capacity to design pedagogic strategies that achieve learning outcomes in students, where the emphasis is placed on student learning rather than instructor preparation. A learning management system (LMS) is a software application or Web-based technology used to plan, implement, and assess a specific learning process.

Organization: An organization is a group with certain mission and goals. For corporate and business world, organization refers to commercial or industrial enterprise and the people who constitute it. It can also be group or a unit of people working together with a common objective of profit maximization.

Strategies: A method or plan chosen to bring about a desired future, such as achievement of a goal or solution to a problem. Strategy is a result of choices made, on where to play and how to win, in business it has got to do maximize long-term value.

Training: Organized activity aimed at imparting information and/or instructions to improve the recipient's performance or to help him or her attain a required level of knowledge or skill.