E LEARNING: A TOOL IN THE NEW MILLENNIUM

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ABSTRACT

Learning leads to growth of an organization. This learning function has undergone various changes. It has changed from instructor led learning to the use of modern technology for helping employees learn the tricks of the trade. The paper tries to cognize various definitions of e-learning. This paper through the help of various studies available also tries to study the various reasons for moving to e-learning, challenges faced in e-learning and the effectiveness of the same.

Keywords: E-learning

INTRODUCTION

The training function over the years has undergone metamorphosis. Organizations have cognized the fact that they need to constantly develop their employees and hence the function that provides the necessary skill set to the employees has become a function aligned to the business strategy helping organizations create a culture of learning organization. Learning organization embraces a culture of lifelong learning, enabling all employees to continually acquire and share knowledge. (Raymond Noe, 2012). Learning is a process of growth. Learning is relatively permanent change in behaviour which is not a result of growth processes. (K.L. Medsker, 1996)

Training, to help a company gain a competitive advantage, it needs to support business goals and delivered as needed to geographically dispersed employees who may be working at home or in another country. (Raymond Noe, 2012) The emphasis on learning connotes an altogether more important outcome, that of behavioural change and the development of performance through the transfer of knowledge and skills (Allan Macpherson, 2004). Internet has played a crucial role and brought a paradigm shift in the learning process. Learning has moved from classroom or instructor led training to use of technology like online, simulation and web based training to electronic employee performance support systems where employees receive training as and when needed. The changes have been in the learning environment where, in the classroom environment consists of trainer, content, delivery, resource materials and the learners. With the introduction of technology in this environment, the delivery mechanisms have changed. Blended learning goes one step further which includes best of both the worlds.
RESEARCH QUESTION

In spite of including the best of teaching – learning experience for the learners the question still remained about the effectiveness of e learning and which is the best method for learning. The paper tries to address this question about various definitions of e learning and its effectiveness in the current world.

RESEARCH METHODOLOGY

The research paper explores various definitions of e learning and identifies the numerous challenges faced while implementing e learning. The objective of the paper includes understanding the concept of e learning and studying the factors affecting effectiveness of e learning. The paper is based on secondary data. The data is collected from various research journals, websites and published reports.

The objectives of the paper under study are as follows:
1. To understand the concept of e learning
2. To analyze the use of e learning in various organizations
3. To study the effectiveness of e learning
4. To comprehend the challenges faced in e learning programs

LITERATURE REVIEW

Multimedia learning combines audio visual training with computer based training. Computer based training is an interactive training experience in which the computer provides the learning stimulus, the trainee must respond, computer analyses the responses and provides feedback to the trainee. (Raymond Noe, 2012) On line learning or e learning refers to the instruction and delivery of training by computer online through the use of internet or web. Online learning or e learning helps the learners to interact with each other while the learning session is on and decide how they want to learn. E learning helps the learners to learn on their own pace. Though typically delivered through an internet; it can be done through company intranet. (Raymond Noe, 2012)

However, electronic dissemination now requires not only the ability to read and write, but also the technical competence and network depth to create a learning community in cyberspace (Horwath 1999). The emphasis on learning connotes an altogether more important outcome, that of behavioural change and the development of performance through the transfer of knowledge and skills. (Allan Macpherson, 2004)

There are various definitions of e learning either driven by technology or driven by educational pattern or driven by delivery approach.

E-learning is the use of electronic media for a variety of learning purposes that range from add-on functions in conventional classrooms to full substitution for the face-to-face meetings by online encounters” (GuriRosenblit,2005).

“E-learning is to take a course online using a modem, wireless, or cable connection to access academic course material from a computer, phone, or handheld device” (Governors State University, 2008). “E-learning is distance education through remote resources” (Marquès, 2006).

The delivery driven approach talks about the mode in which the training or learning is imparted E-learning is the delivery of education (all activities relevant to instructing, teaching, and learning) through various electronic media” (Koohang & Harman, 2005)

E-learning is an on-line education defined as the self-paced or real-time delivery of training and education over the internet to an end-user device” (Lee & Lee, 2006).

“E-learning is the delivery of a learning, training or education program by electronic means” (Li, Lau & Dharmendran, 2009)
This definition talks more about the way the resources are made available to the learners and pace of learning.

Some other definitions include,

“E-learning is the use of new multimedia technologies and the Internet to improve the quality of learning by facilitating access to resources and services, as well as remote exchange and collaboration” (Alonso et al., 2005).

E-learning is a broad combination of processes, content, and infrastructure to use computers and networks to scale and/or improve one or more significant parts of a learning value chain, including management and delivery” (Aldrich, 2005).

The delivery of a learning, training or education program by electronic means E-learning involves the use of a computer or electronic device (e.g. a mobile phone) in some way to provide training, educational or learning material. (Derek Stockley 2003)

Distance learning also uses technology to help students’ learn the content digitally. The learning modules are delivered to the learner and he can learn at his/her own pace.

Rosenberg in his book E-Learning: strategies for delivering knowledge in the digital age defines learning as “the process by which people acquire new skills or knowledge for the purpose of enhancing their performance” .He defines e-learning as a networked phenomenon allowing for instant revisions and distribution and highlights the importance of performance or outcomes based training as compared to the traditional training. He accentuates that people learn more when they interact and are involved with each other while learning. E-learning is powerful when both training and knowledge management are integrated, but even more powerful when integrated with classroom training in a “learning architecture” (Sanderson). Learning architecture involves everything right from designing, sequencing and integrating all the electronic and non-electronic elements essential to derive optimum improvement in competence and performance (Sanderson).This book also discusses the effectiveness of e learning in terms of reduced operational costs, quality, speed and increased service value. The quality of e learning can be gauged through appropriately responding to the learners and evaluating the learner based on the improved performance.

Various organizations have used e learning as one of the methodologies of training. The following section of the paper discusses the reasons for implementing e learning, the challenges faced by these organizations and the factors affecting the effectiveness of e learning

Case 1: American Heart Association (AHA) wanted to overhaul its training function and provide its employees world class learning along with reduction in cost. Derek Cunard was appointed as the founding dean for taking this forward. He conducted various town hall meetings nationwide to illustrate the AHU Skill Port platform. The goal of this university was to develop programs around AHA’s competencies and support both personal and professional growth of the employees to help in learning the competencies which will accelerate the career path. In Cunard’s words, To have a successful learning initiative within an organization, you absolutely need a team of people passionate about adult learning who see the importance of marketing it with flair— that’s more than just sending an email out,” (Waltner, 2012). He met with executives, managers, and staff to select and package online courses organized around AHA’s competencies. Their team developed videos and promoted various courses. In 2010, the university implemented Skill Soft’s suite of Microsoft Office courses and eliminated live Microsoft help desk support, resulting in an estimated $2 million gross savings. (Waltner, 2012).They have offered various one hour programs which supplement face to face workshops. The organization uses this learning portal as an engagement tool where even the new joiners are inducted about the organization culture and enrolled in on line learning programs to enhance their competencies. The short one hour programs from Skillsoft were encouraged to be used as starters for meeting or team building sessions. Being an online program, as on January 2011, there were more than 50,000 course enrollments with a remarkable 80 percent completion rate.
Case 2: A survey by the Impact Instruction Group on learning and technology trends in 2014 found that corporate investment in e-learning is high and investment in mobile learning is on the rise. Thirty-nine percent of respondents said they are investing in mobile learning—a 17 percent increase from 2013. Twenty-four percent reported investing in virtual conferences, an area where there was no reported investment in the previous year. However, respondents reported a decrease (from 75 percent in 2013 to 66 percent in 2014) in leaders’ interest in technology-based learning systems. (SLADE, 2015) This could be due to the lack of solid strategies for effectively using learning technologies. When asked about mobile learning in particular, 44 percent of respondents said their organizations had purchased new mobile devices, but had no strategy for using them. Without a solid strategy, it is difficult for leaders to see the value of implementing a technology-based learning solution.

Case 3: According a study reported in HR Magazine, HR Trendbook 2012, Companies in India use e-learning in more areas like professional development, basic skills development such as time management, advanced skills such as project management and finance, language learning, product development training, business development, and coaching and mentoring than in US and UK. Companies who used it mostly for induction and onboarding, compliance, technology training and awareness-raising on workplace and social issues such as diversity and drug and alcohol abuse. Respondents in all the countries under study opined that the in house training programs were more effective than other modes of training. UK respondents favored the coaching by line managers while US preferred job rotation and shadowing while Indians preferred on the job training. Also, the report stated that Indians preferred online virtual learning management systems, learning libraries and e-books to deliver e-learning while US respondents preferred webinars and virtual classrooms while UK respondents used more of blended learning approaches.

Case 4: E-learning refers to the training sessions or educational courses delivered electronically through CD-ROM or through virtual classrooms facilitated with the help of trainer or teacher. The advantages include less expensive than traditional classroom methods, travel cost for trainer and trainee, employees away from job and training facility expense. However, some firms that have spent large amounts of money on new e-learning efforts have not received the desired economic advantages (Strother, 2002). In 1999, John Chambers, the CEO of Cisco Systems in his keynote speech at Fall 1999 Comdex Trade Show in Las Vegas said that e-learning will witness a change due to advent of internet. Few reports throw light on the challenges faced while implementing e-learning which include high dropout rate by both freshers and experienced employees. People couldn’t find the related material fast, didn’t have time to complete the course, got bored or had numerous interruptions while undertaking the course. (Upadhyaya, 2013). The problem was primarily motivational and not about technology issues or learning design (Frankola, 2001). The top five reasons for non-completion of online e-courses include lack in motivation, instructional design related factors, instructional design and learner style mismatch, time conflicts, non-clarity in learning outcomes (Wang, Foucar-Szocki & Griffin, 2003). The least common reason cited was support from the organization and follow up. From user’s perspective, the challenges are interface problems, browsing problems, content problems, interaction problems or usability problems. (Freire, Arezes and Campos, 2012)

Considering the above challenges, Mallik, 2013 has given a socio-technological systems perspective for overcoming the challenges. This perspective talks about amalgamation of two systems one being technology which consist of various processes and tasks and the other being the social system which consists of people attributes, relationships between them, reward structures and authority structures. The study concludes for overall effectiveness of e-learning.

In other words, if organizational structure components are favorable, performer of the task is suitable for the task and the technology is adaptable, it will result in higher overall effectiveness of e-learning. As it can be seen from the results, if structure variables are conducive and actor are willing, ready and suitable to learn, and technology is suitable for delivering the content, the course content design have
lesser role in the overall effectiveness of e-learning. If people are willing and motivated to learn, and/or the organization is placing emphasis on the course, e-learning delivery can be effective. The course and its design have little influence on the effectiveness.

The study was carried out with Project Management Professionals who have attended the preparatory course for Project Management Professional Certification. in IT, Telecom, Infrastructure and chemical industries. The study concludes that for e learning to be effective, various aspects need to be considered like the organizational aspect and the people aspects. Organizations need to focus on eLearning and believe as a long term payoff. The senior managers need to communicate its importance and an alignment has to be established between the higher and lower management on this aspect. This has to be substantiated with formal recognition and reward system for motivation of the employees along with close monitoring of the progress through e learning.

Case 5: An attempt was made to identify the effectiveness of web based instruction as compared to classroom instruction, where it was found out that the web based instruction was more effective for declarative knowledge. The web based training is more effective when trainees were in control of program, practiced the program and received feedback on the training (ITZMANN, 2006)

Case 6: Mun Y. Yi and Yujong Hwang studied the relationship of self-efficacy concept and the e-learning effectiveness. This is based on TAM model i.e. Technology acceptance model. Davis et al in 1989 had develop a model for explaining the usage intension and acceptance behavior. According to TAM the system usage is determined by behavioural intention which is in turn determined by perceived useful ness and perceived ease of use. Behavioral intention of the person is mediated by perceived useful ness and perceived ease of use. (Yi, 2003) Learning goal orientation was found to be a determinant of application-specific self-efficacy. It was found that important roles of enjoyment, learning goal orientation, and application-specific self-efficacy in positively influencing the decision to use a Web-based technology and subsequent actual use. However, enjoyment while using the web based learning module was considered important rather than ease of use while determining the usefulness of e-learning. Learning goal orientation has a positive effect on application specific self-efficacy. Gamification or game based learning facilitates acceptance of technology. Thus in order to accept the new technology in learning, the learners must be provided with a learning environment which facilitates self-efficacy along with learning goal orientation and personal enjoyment.

Case 7: A study was undertaken to understand the effectiveness for e learning programs in a large Mexican corporation, is a leading consumer company in Latin America who had created virtual corporate university. This university had developed certain competency based learning modules support professional and personal development of its employees using various multimedia and other tools available. This study analyzed various aspects of learner interaction like learner–learner interaction, learner–content interaction and learner–teacher interaction amongst which it was found that learner–content interaction was considered most significant by the learners than the other two. However, the study did not find any statistical significance between different learner interaction and effectiveness of training. However, majority agreed that they had applied the learning on the job. (Alejandro Armellini, 2013)

Case 8: Neal Beamish, Colin Armistead, Mark Watkinson and Gina Armfield in their paper, “The deployment of e-learning in UK/European corporate organizations” describes e learning as a wide set of applications and processes allied to training and learning which includes computer based training, virtual classrooms, online learning and digital collaboration in learning (Neal Beamish, 2002). This paper stresses on the fact that a common factor of performance assessment after training and its linkage with business objective is essential. Though remote locations of learner make the assessment difficult, corporates have designed ways of assessment test to test the learning of learners. The paper reiterates the fact that eLearning contributes to the cost saving in the organizations. However assessment of the learner was cited as major hurdle in many cases which was overcome through on line assessment systems. The advantages of incorporating e learning include faster delivery of training,
The role of teacher also undergoes a change from being a knowledge sharing to earning was res from a passive, teacher.

Learning is more efficient because learners gain knowledge, skills, and attitudes faster. Learners feel more engaged and involved during e-learning than through traditional instructor-led methods (Silva, November 2014). The use of interactive topics and online quizzes during e-learning shifts the focus from a passive, teacher-centered model to one that is active and learner centered, offering a stronger learning stimulus (Silva, November 2014). The role of teacher also undergoes a change from being a knowledge sharing to more of a facilitator mediated observation along with changes in learner’s behavior and institutional changes which is costly to be measured.

**Case 9:** CIPD, UK carried out LnD Survey which reported that coaching and in house development programs were ranked more effective than other training programs. (FARAGHER, 2014). E-learning was more used for information rich topics with the use of interactive topics and online quizzes. Another view point was expressed in support of face to face or classroom learning that the classroom learning are more beneficial for inculcating behavior change as peer learning helps in knowledge sharing as well.

**Case 10:** Jorge G. Ruiz et.al studied the impact of eLearning in medical institutions. E-learning refers to the use of Internet technologies to deliver a broad array of solutions that enhance knowledge and performance learning effectiveness have been explored in three areas mainly the product utility, cost effectiveness and learner satisfaction. The e-learning has shown to be equally effective as traditional methods, learner’s knowledge post-test has been seen to be improved and had better retention. (Jorge G. Ruiz, 2006 March) The paper stresses on the fact that learner’s achievement in terms of knowledge in e-learning or web based was equivalent to traditional methods but e-learning leads to cost saving as compared to traditional methods. Savings are related to reduced instructor training time, travel costs, and labor costs, reduced institutional infrastructure, and the possibility of expanding programs with new educational technologies. While considering the satisfaction of learners, web based learning was found to be more satisfying considering the ease of use, interaction and user friendliness of the design. Kirkpatrick evaluation model of training evaluation though can be used for evaluation, it has to be combination of a facilitator mediated observation along with changes in learner’s behavior and institutional changes which is costly to be measured.

**Case 11:** Ishara Silva refers to Rosenberg’s eLearning definition as to the use of Internet technologies to deliver a broad array of solutions that enhance knowledge and performance. This paper refers to the concept of Student-centered learning which is an approach to learning in which learners choose not only what to study but also how and why. In the student-centered environment, the learner requires individualization, interaction, and integration. Learners can select their own learning methods and content and being interactive increases the engagement of learners with the content. Learning is a deeply personal experience: people learn because they want to learn. (Silva, November 2014) During e-learning, the learners have access to the learning content, decide their own pace and sequence of learning, time schedule and thus helps them meet their personal learning goals with minimum guidance. E-learning is more efficient because learners gain knowledge, skills, and attitudes faster than through traditional instructor-led methods (Silva, November 2014). Learners feel more engaged due to the interactive content. Interactive learning shifts the focus from a passive, teacher-centered model to one that is active and learner-centered, offering a stronger learning stimulus (Silva, November 2014). The role of teacher also undergoes a change from being a knowledge sharing to more of a learning facilitator. Studies in several literature have consistently demonstrated that students are very satisfied with e-learning (Brophy, 2013). Factors which support e-learning amongst learners include Awareness of hardware and software, familiarity with learning environment, willingness to use, usefulness, interaction involved during e-learning and guidance available.

According to Rosenberg, Cost, quality, service and speed can become the e-learning value proposition used to build the defensible business case. Understanding how e-learning can cost less than classroom training is based on reducing operational costs by increasing efficiency and decreasing cycle time, for example. Quality is demonstrated by responding to and appropriately acting on employee evaluations.
of the learning content and by evaluating effectiveness based on improved performance. Service value can include looking at the accessibility of the learning and the quality of the access. The focus on quickly implementing the e-learning initiative or quickly adjusting to changing business needs helps to define the speed component of the value proposition

**Case 12:** One of the old overhead manufacturing units overhauled its training function through the use of e learning. It partnered with one of the library of e learning sources and implemented a new LMS, to help learners learn across various geographical locations. (Reed, August 2017).

**Case 13:** Vasundara Tadimeti studied the use of e learning for soft skills training for the first time managers and training for technical professionals. Traditional methods of training were preferred by the first time managers, followed by coaching for management training The technical professionals preferred face to face learning. This paper discussed various challenges faced while e learning which included internet connection and relevancy of on line content if procured from a vendor, participants readiness for e learning and learners non interaction with each other. (Tadimeti, 2014)

**DISCUSSION AND CONCLUSION**

Learning involves a relatively permanent change in behaviour of an employee which leads to performance enhancement in the organization through the increase in knowledge or skill. E Learning uses technology to aid in the learning process for the learners. The multimedia technologies along with audio visual aids help creating a learning experience for the learners. In simple terms, e learning involves delivering training through the use of electronic media, may be internet, company intranet or even mobile phone. It includes a broad range of things from processes, content availability, and infrastructure availability to the delivery of the module. Thus e learning can be alleged as a learning which is self-paced by the learner having access to all the contents of course and delivered with the help of technology.

**REASONS FOR MOVING TO E LEARNING FROM TRADITIONAL LEARNING METHODS**

The various reasons for moving to e-learning includes cost advantage, reduction in cost of the trainer, facilities, travel cost for the trainee and trainer. The loss in workplace productivity is minimized as the learner can learn as per her/his time availability and at his/her own pace. E learning helps the employees at remote places to access the content. E learning ensures faster delivery of training. It can be customized as per the eLearning needs of employees even for the manufacturing sector employees who are not in front of their computer every moment. E Learning can integrate learners across various locations at the same time. The Learning Manager can log into the LMS (Learning Management System) and assign the courses to the learners. It is also used as an engagement and development tool for the current employees as well as new joiners in the organizations. E learning provides customized training as well as flexibility in training.

**CHALLENGES FACED USING E LEARNING**

The challenges can be divided into two; the user’s perspective and organizational perspective. The organization needs to have strategies ready for the use of technology based learning. Also the challenges from organization’s perspective include the top management support, providing learner the desired learning environment, assessment of learner and linking it with strategic objectives. User’s perspective include the motivation of learner, high dropout rate by learners, dedication of time given by learners, availability of personal IT infrastructure. However along with these advantages, cultural resistance also stem up along with learner related factors. The learner factors include motivation of learner, dedication of learners, time dedication of the learners and disturbances at workplace. Organizational level factors include the availability of IT infrastructure, financial support, access of personal IT facilities and IT skills of employees and readiness of employees for e learning. Few organizations quoted that assessing performance of the learners was a problem which was later on overcome through on line assessment modules or use of business simulations.
To implement e learning, a team passionate for learning is essential who will create a learning environment for the learners. Learner content interaction is important while e learning. Learner’s awareness about hard ware and software and the willingness to use the technology plays a vital role. Performance assessment of the learners after the program is a critical aspect of e learning which needs to be mapped.

EFFECTIVENESS OF E LEARNING

Effectiveness of e learning can be considered on the basis of cost, quality of the training and speed. The accessibility of the e learning content also determines its effectiveness. The two aspects considered in effectiveness are the organizational aspects and the learner aspect. The organizational aspects include the cost while satisfaction of the learners also needs to be considered. Satisfaction in eLearning is further dependent on the ease of use, interaction and the user friendliness of the program. Since e eLearning is a self-paced program, the program was more effective when the trainees considered themselves to be in control of their program and received feedback on their training. Hence a close monitoring of these programs was suggested. To be effective, learning programs need to be interwoven in the system of the organization e.g. the reward and recognition system and the performance enhancement system needs to be linked with the learning modules.

CONCLUSION

Thus, to conclude, many organizations are moving from traditional instructor led training to e learning modules considering the cost advantage. The learners are satisfied as they can learn at their own pace and as per the availability of time. However the readiness of the learner, his/her motivation, willingness and dedication, availability of infrastructure, top management support, systematic assessment of learner and cultural resistance are a few challenges posed to e eLearning. However a well dedicated team creating a learning environment in the organization can help overcome these challenges. Though Kirk Patrick model is generally used for evaluation of effectiveness of training, other aspects like reduction in cost, service, user friendliness, content–learner interaction and learner satisfaction are few of the aspects influencing the effectiveness of e eLearning. Organizational support is one of the major factors affecting the effectiveness of e Learning programs.

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