

E-Learning Methodology

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Abstract: *E-learning is the most important explosion propelled by the internet transformation. It is the use of technology which enables people to learn anytime and anywhere. While teaching can be based in or out of the classrooms, the use of computers and Internet forms the major component of E-learning. It can be termed as a network enabled transfer of skills and knowledge, and the delivery of education is made to a large number of recipients at the same time. E-learning can offer effective instructional methods, such as practising with associated feedback, combining collaboration activities with self-paced study and personalizing learning paths based on learners' needs. The focus of E-learning is on both asynchronous and synchronous methodology. It investigates three major E-learning tools which are (i) curriculum tools (ii) digital library tools and (iii) knowledge representation tools. This paper reports on the extent to which the effectiveness and students' attitudes towards E-learning impacts on their learning styles. The paper also reviews literature and gives a scholarly background to the study by reviewing some contributions made by various researchers and institutions on the concept of E-learning. Finally, the paper suggests that synchronous tools should be integrated into asynchronous environments to allow for any-time learning model and gave remark that E-learning needs to improve from various barriers.*

Keywords: E-learning; Synchronous; Asynchronous; Tools; Methodology; Barriers.

I. INTRODUCTION

A type of system which is based on formalised teaching but with the help of electronic resources is known as E-learning. It refers to a novel teaching and learning in education. Over the past years, E-learning became a vital source of expansion and studying in education. Due to the opportunities created by E-learning, learning and teaching can now happen at any time and in anywhere. New media like the internet has become one of the crucial ways to make resources available for research and learning for both teachers and students to acquire information. Such type of technology is an important part of today's world, which delivers, supports, and enhance the quality of learning. As a result, Internet and Information technology has created a necessity to modify learning patterns of university students by using more modern, effective, and alternative approach such as E-learning system.

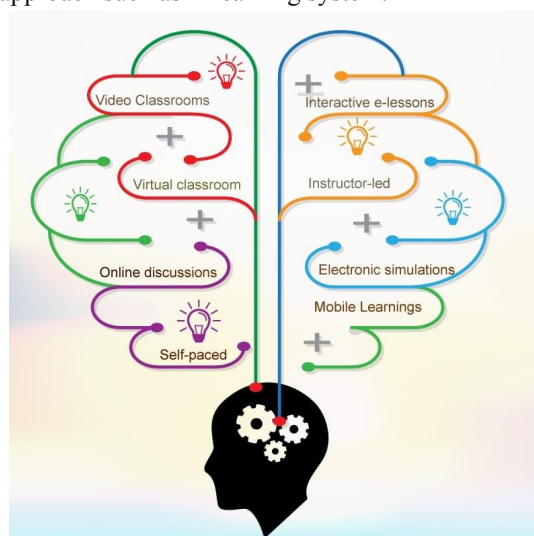


Fig.1: Factors and Elements of E-learning Industry



It has been swiftly appearing in a variety of higher education organizations worldwide, both private and public. In general, three components are used in the widely recognized E-learning facilities: ease for individual reporting, automated compliance, and conformity. Thus, E-learning can deliver a variety of solutions to enable learning and improve students' performance. It is an option to any organization looking forward to improving the skills and capacity of its employees. With the expeditious change in all types of working environments, especially medical and healthcare environments, there is a constant need to quickly train and retrain people in modern technologies, products, and services found within the environment. The purpose of the current study is to investigate the impact of self-directed E-learning on undergraduate students' and working employees' achievements. The paper will also highlight some of the points on disadvantages of having E-learning system in the student's and working people's life.

1.1 Objectives of E-learning

E-Learning enables organizations to surpass distance and other organizational gaps by providing a compatible virtual learning environment. Having clear learning objectives is a great tool for building the structure of E-learning content. Some of the objectives which greatly influences E-learning content is mentioned below:

1. Identify concrete expectations and ROI(Return of Investment) requirements from the desired E-learning solution.
2. Identify the target audience and the shortfall in knowledge, skills, and attitudes of this audience and determine what the target learners need to know.
3. Determine the tasks to be taught, identify subtasks and other elements involved
4. Review existing methods and infrastructure by providing training or meeting learning needs.
5. To keep employees up with new technology, to generate new ideas, and to keep employees fresh and inspired.
6. To reduce the time required for effective learning. E-learning is sometimes called "just-in-time" learning. Such learning allows employees to take what they have just learned from their computer screens and apply it to their tasks at hand.
7. Improve flexibility of course delivery by eliminating additional staff member and allowing staff to manage their own training and development as per their own free time.

II. LITERATURE REVIEW

There has been extensive debate about a common definition of the term e-learning. Existing definitions according to Dublin (2003) tend to reveal the specialization and interest of the researchers.

According to Oblinger and Hawkins (2005) and Dublin (2003), there is even no common definition for the term. They have noted that E-learning has transformed from a fully online course using technology to deliver part or all of a course independent of permanent time and place.

Marc (2000) in his book review on E-learning strategies for delivering knowledge in digital age noted that one of the advantages of E-learning in education is its focus on the needs of individual learners as an important factor in the process of education rather than on the instructors, or educational institution's needs.

According to Smedley (2010), the adoption of E-learning provides the institutions as well as their students or learners the much flexibility of time and place of delivery or receipt of according to learning information.

Wagner et al (2008) note that E-learning makes available extra prospects for interactivity between students and teachers during content delivery.

As per Codone, 2001; Amer, 2007; Urdan and Weggen, 2000; Algahtani, 2011; Marc, 2002; Klein and Ware, 2003, use of E-learning allows self-pacing. For instance, the asynchronous way permits each student to study at his or her own pace and speed whether slow or quick. It therefore increases satisfaction and decreases stress.

According to Raba (2005), objectives can be accomplished in the shortest time with least amount of effort. Both learners and instructors can be able to accomplish and keep up with development as they obtain experience that is provided by numerous specialists in the various fields of knowledge.

The impacts of E-learning on educational ethics according to Khan(2005) are ensured. This is because the environments for e-learning are tolerant, so they are a good way of offering equal access to the information world irrespective of the locations of the users, their ages as well as ethnic origins, and races.

Authors such as Zhang et al (2006) and Judahil et al (2007) gave the positive impacts of E-learning from the perspectives of the students or learners. Zhang et al (2006) stresses that E-learning permits the exploration of much flexible learning ways with much reduced need for travel to go to classes.

According to Almosa (2002), regardless of all the disadvantages of E-learning, there are a lot of benefits which inspire its use and encourage the search for ways to reduce disadvantages.

III. E-LEARNING METHODOLOGIES

E-Learning is a powerful tool for corporate training. Its method continues to develop and adapt the employees' needs, providing an engaging and always modern solution for ongoing learning and training. It also allows employees' freedom, flexibility and independence to learn at their own pace and time. It helps in broadening the horizon of possible resources due to the internet and the global reach that comes with it. As there is a current trend to increase the use of E-learning in academic and industrial sectors, in the near future a higher demand of technology support is definitely expected. Software tools which support many critical tasks of instruction design should provide automated support for the analysis, design, documentation, implementation, and deployment of instruction via Web. Most research studies are focusing on Computer Supported Collaborative Learning (CSCL). This is a method in which collaboration rather than individual learning designs are used in an online class which helps students to get more motivated to actively participate because of the online social interactions. In CSCL, researchers mostly distinguish into two types of interactions between learner- tutor and learner- learner:

i) Synchronous Interaction: It requires interaction of all participants during online class at the same time. Examples include Internet voice telephone, video teleconferencing, text-based chat systems, instant messaging systems, text-based virtual learning environments, graphical virtual reality environments, and net based virtual auditorium or lecture room systems. It encourages faster problem solving, scheduling and decision making, and provides increased opportunities for developing. However, the cost of synchronous interaction is usually high, and the interaction is narrower due to time differences.

ii) Asynchronous Interaction: In this type, learners or tutors have freedom of time and location to participate in the interaction, examples including interaction using e-mail, discussion forums, and bulletin board systems. It has been reported that by extending interactions to times outside of classes, more persistent interaction and closer interpersonal bonds among students can happen. Thus, one cannot totally imitate a real classroom with synchronous interaction, one can offer asynchronous interaction that provides time for better reflection and allows global communication unbounded by any time zone constraints. Asynchronous interaction thus is more commonly used in CSCL systems than the costly synchronous interaction.



Fig.2: E-learning for effective employee training

IV. TOOLS OF E-LEARNING

Following are the three types of E-learning tools:

1) Curriculum Tools: These tools are used in schools and colleges to provide quality education to the students. Materials are selected and organized to ease out class activities. Additional tools such as discussion forums and online quizzes are combined to support collaboration and evaluation. There are some commercial curriculum tools which includes three types of combined parts: instructional tools, administration tools, and student tools. Instructional tools include curriculum design and online quizzes with computerized grading system. Administration tools include file management authentication, and authorization. Student tool functions include:

- a) Browsing class material which includes reading, assignments, projects and other resources
- b) Self-testing and evaluation-based tests which is designed by instructors to evaluate student performance
- c) Learning progress scheduling and tracking of assignment reminders and submission, personal calendars, and activity logs.
- d) Collaboration and sharing asynchronous and synchronous bulletin boards and discussion forums.

2) Digital library Tool: It focusses on locating resources. It helps in exploration and collection phases of information. Digital library features mostly include searching, browsing, and discovering special collections or exhibits. Search and browsing are used to track resources and explore related topics. Special collections or exhibits contain assembled materials which represents unique treasure for fascinated users.

3) Knowledge Representation Tool: It usually helps learners to visually review, capture, or progress knowledge. Curriculum tools mostly rely primarily on a text-based syllabus approach to describing course content. A visualization tool can attract both learners and instructors in an active learning process when they build contiguous semantic displays of the knowledge, concepts, and skills that the learner possesses and acquires.

4.1 Benefits of E-learning

The acquisition of E-learning in education, especially for higher educational institutions has many benefits, given its several advantages and benefits, E-learning is considered the best methods for education system. Following is the list of advantages:

1. E-learning is very much flexible when issues of time and place are taken into consideration. Every student has the luxury of selecting the place and time that suits him/her.
2. E-learning is fairer. It expands learning to more people. Being available everywhere is another advantage of E-learning as it brings education to remote communities and individuals who cannot afford to continue traditional university routes.
3. E-learning enhances the effectiveness of knowledge and qualifications via ease of access to a huge amount of information.
4. E-Learning is self-paced. It allows to control the pace of learning. A student does not have to wait for fellow students to catch on but can accelerate ahead when feel confident with a concept. Research suggests that people learning at their own pace do better than those studying the same course materials in a traditional way.
5. It provides opportunities for relations between learners using discussion forums. This helps to eliminate barriers that have potential of hindering participation which includes the fear of talking to other learners
6. Online learning is more cost-effective. It is cheaper to deliver than in personal training. The costs of paying for physical space, an instructor, hotel and travel costs, etc soon add up especially if we need to train lots of employees in different locations.
7. E-Learning provides both Consistency and Adaptability. It can be used in different types of business to boost the knowledge and skills of employees at large scale and in a consistent way.



Fig.3: Benefits of E-learning

4.2 Disadvantages of E-learning

E-learning, despite of many advantages, also have some disadvantages. Below are the following:

1. Online student feedback is limited. In traditional classrooms, teachers give students immediate face-to-face feedback. Students who are experiencing problems in the curriculum can resolve them quickly and directly either during the lecture or during office hours.
2. E-learning as a method of education makes the learners undergo remoteness, loneliness as well as lack of interaction or relation. It therefore requires a very strong inspiration as well as motivation skills to manage time in order to reduce such effects.
3. E-learning as a method might have a negative effect when it comes to improvement in communication skills of learners. Though, it might have an excellent knowledge in academics, they may not possess the required skills which delivers their acquired knowledge to others.
4. Cheating prevention during online assessments is very much complicated. It is unfortunately, one of the biggest disadvantages of E-learning which continues to be cheating through various methods. Compared to on-campus students, online students can cheat on assessments and assignments more easily as they take assessments in their own environment and while using their personal computers.
5. Online instructors tend to focus on theory rather than practice as large portion of E-learning training providers choose to focus largely on developing theoretical knowledge, rather than practical skills.
6. Lack of authorization & quality assurance. There are still a vast number of online learning platforms which are unauthorized and where all materials are quality checked by no one besides the instructors themselves. Due to this, poor quality assurance and lack of authorized online learning providers continue to weaken the legitimacy of online education.
7. E-learning may also lead to congestion or heavy use of some websites. This may attract some unexpected costs both in time and money disadvantages.

V. CONCLUSION

E-learning could be an effective tool for providing knowledge to students and it has great potential to overtake the traditional teaching method. Web-based training also helps to facilitate learners and instructors in educational environment. It involves training, delivery of knowledge and motivates students to interact with each other, as well as exchange and respect different point of views which eases communication and improves the relationships that sustain learning. Nowadays, many universities and colleges implement E-learning system in their own training programs to satisfy student's needs. Despite some challenges discussed, the literature has sought to explain the role of E-learning and how E-learning has made great impact in teaching and learning. The overall literature of paper which explains the advantages and disadvantages of E-learning suggests the need for its implementation in higher education for faculty, administrators and students to enjoy full benefits that come with its acquisition and implementation.

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