E-learning, the next big name in education

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Abstract

Information technology has invaded every day-to-day activity of a common man. The one activity that happens throughout our life either consciously or sub-consciously is “learning”. Learning happens by different processes depending upon the type of learning. This paper goes on to explain the three types of learning namely, knowledge-based, skill-based and attitude-based learning systems and how the technology enabled learning (e-learning) can have an impact on all these. This paper analyses how e-learning can integrate auditory, visual and kinesthetic forms of learning commonly found in individuals. The benefits and drawbacks of e-learning in its present form in the learners as well as educators perspective are discussed elaborately. Practicable suggestions are brought out to maximize the advantages and minimize the limitations. Though e-learning has come a long way, breaking many barriers to its present form; still, a series of challenges are ahead for it to cater to an ever growing wide spectrum of beneficiaries. This paper not only brings out carefully these challenges but also the feasible mechanisms to face these challenges.

Keywords: E-learning, integrate auditory, visual, kinesthetic forms.

Introduction

The systems used in one period of time are completely replaced by newer systems with more advancements and conveniences in another period of time. Human race has been witnessing this kind of changes ever since its existence. The method of teaching-learning process is also no exception to this change. The education system has come a long way from the gurukulam to its present classroom form, crossing many intellectual and technological hurdles. The advent of computers and Internet has changed the approach of every area of human activity by 360° including the process of learning. The opportunities to pursue educational objectives through e-learning are emerging worldwide at a very rapid rate and in many different forms. They are variously described as e-courses, web courses, virtual learning, online courses, digital courses etc. The learners are attracted by their convenience and affordable cost to acquire additional knowledge and qualifications.

E-learning is generally defined as, “the convergence of the Internet and learning, or Internet-enabled learning.” Another version of definition says, “the use of network technologies to create, foster, deliver, and facilitate learning, anytime and anywhere.” e-learning uses the Internet and/or intranets to deliver, administer, and measure the effectiveness of training, instruction, and information dissemination. It gives competitive edge to allow people to keep ahead of the rapidly changing global economy. It can be an alternative delivery system or supplemental support to more traditional instructional systems such as the classroom, printed study materials and the like. Yet the process has not yet matured to the level of confidence seen in the conventional system of teaching and learning. If designed and delivered correctly, e-learning can be a good supplemental educational system doing wonders with the technology loaded learning process. The problem with existing e-learning scenario is that they focus too heavily on the technical side, less so on the dynamics of the learning process.

Types of e-learning

Since, e-learning is robust, it has many inbuilt facilities. With different technological support systems, e-learning mostly happens in two different modes, (1) online and (2) offline. In online mode, the teaching sessions happen live from a remote location, may be a hi-tech studio and accessed by an individuals or a group of end users. The viewers/learners can interact with the educators live through teleconferencing (audio/video). A real facilitator will be available to teach or clarify the concepts on the spot but, virtually. But, in offline there is no live interaction. The learner can access the already stored contents in the form of text, video clippings and simulations from the website. This mode will be ideal for self learners who are matured. Both the types of e-learning methods have their advantages and disadvantages as well. The learners as well the instructors need a specialized skill for using the online and offline modes of learning. In online, the teaching sessions can be archived and stored for future reference. The learners can rerun and view the session again as many times as to get the clarity of the taught concept. The quality online sessions which are archived become a good material for using in the offline mode.
Despite the absence of live interaction in the offline mode, interaction can still occur through offline means like email, SMS, and voice-mail. The offline mode will be more suited for instruction-based learning, which is more personalized.

**Choice of e-courses**

In any learning process, one of the three attributes or their combination is imparted to the learners. They are: (1) knowledge, (2) skills, and (3) attitude. Knowledge is the psychological result of perception and reasoning. Skill is an ability that has been acquired by training. Attitude is a mind-set that represents an individual's behavior or belief towards a matter. If designed and delivered correctly, e-learning can impart all these attributes. The real challenge in e-learning is keeping in mind the people for whom it is designed and what attributes are to be delivered. How do people acquire knowledge? How do people acquire and retain skills? How do people develop their attitude? Only after these questions are addressed can the technical side and electronic delivery be adapted to the learner.

A person wishing to pursue e-learning may have many different objectives. Some may wish to acquire additional knowledge on topics or subjects in a random manner. Some may want to strengthen their understanding of their conventional courses by enriching them with additional information and newer methods. Some may take a few web-based courses for credit to be counted partially or fully for degree or diploma requirement. E-learning can cater to the requirements of learning from kindergarten to postgraduate levels. The e-learning resources may have been developed and posted on the web by educational institutions that also offer formal courses on the same subjects in their institutions. Some of the web resources may be in the electronic form only for programmes offered by educational or commercial organizations. Some of these resources may be freely available while many may require formal registration and access rights. In general, the e-learning happens in the distance mode.

**Pedagogy Vs technology**

In e-learning, the pedagogy must drive the choice of instructional technology, not the other way around. The e-learning courses are likely to fail if they are delivered as if they were traditional courses. Compared with a human instructor, technology is less adaptive. In a classroom, an instructor can adjust his delivery if he feels that a concept was not communicated clearly. In e-learning, this type of adjustment is usually not possible. The design process must anticipate and meet potential concerns and ambiguities. E-learning is the fusion of technology and education, and most often, the instructional designers’ greatest role is to bridge the gap between the content and the technology. This vital role ensures that graphic designers and programmers properly develop the concepts of an expert in the subject matter in keeping with the pedagogical requirements of e-learning. Once a plan of integration is implemented, it is less likely to change according to the student's reactions. This is why instructional design plays an important role in bringing pedagogy and technology on the same platform.

**Instructional design**

Instructional design is the systematic process of translating general principles of learning into instructional materials. It is similar to lesson planning, but more elaborate and more detailed. It includes instructional specifications using learning and instructional theory to ensure the quality of instruction. It is the entire process of analysis of learning needs and goals and the development of a delivery system to meet those needs. It also includes development of instructional materials and evaluation of all these instructions and learner activities. Instructional design can help educators making the best use of technology and therefore guarantee a successful integration. The general look and process of content exploration with appropriate delivery tool should be standardized. There should be consistency between various courses developed by various instructors/designers. In general, instructional design needs to move in the direction of flexibility and learner-empowerment if it is to keep up with technological and instructional changes. The subject contents must be well organized and strategies for teaching via a chosen medium have to be well thought out. Since, it is an iterative process; it requires ongoing evaluation and feedback.

**Content development**

The development of contents for e-learning programmes requires a mature level of subject knowledge as well as the awareness of technical tools available for the presentation of the concepts. Course materials, which are in pure text form, tend to be monotonous. Excessive use of graphics and sound presents difficulties in accessing them if the learner does not have sufficient bandwidth. The process of content development focuses on the most effective way to present the concepts and explanations. It begins with the learner and his/her learning experience so that quality of course is ensured. It gives structure to the student's process of working through course material. A current concern in e-learning is the development time. Proper use of technology can speed up development. It should create a transparent process to track and utilize the experiences of development teams. If there are courses developed and tested by reputed institutions and available for adoption by others, this would help to save considerable time and effort by individual institutions attempting course developments on their own except for purposes of additional content if needed.
Capabilities and limitations

With more and more organizations considering the potential of e-learning as an alternative means of improving and maintaining the knowledge and skills of their students, teachers and employees, it is high time to seriously consider switching over to this new mode learning. To ensure success, it is important that organizations understand both the capabilities and the limitations of e-learning. It is also equally important that e-learning planners and developers become acquainted with successful e-learning applications rather than start blindly and grope in the dark. E-learning is one of many education/training delivery system alternatives to classroom instruction. The Internet has made it possible to develop knowledge and skills and to deliver information with a high degree of efficiency not often possible with traditional classroom instruction. It can reduce or eliminate such constraints associated with classroom instruction as: self-pacing, instructor staffing, instant evaluation system, student travel and lodging, access to archived sessions class scheduling, on-demand availability, distribution and inventory, training materials reproduction and effective follow up & feedback.

However e-learning has its constraints and trade-offs also. Some of the key constraints to consider are:

Level of interactivity: The most common limitation is the lack of sufficient opportunity for interaction between the learner and the subject expert. It may not be possible always that the expert who developed the course to be available for interaction especially if the number of users is very large. This may be possible in some of the more advanced level courses where the teacher is accessible online or on mail contact for a small group of students. Some face-to-face interactivity is possible using facilities such as teleconferencing and on-line discussions. However, other connectivity issues often come to bear in such applications. Sessions must be scheduled in advance and are impacted by time-zone differences among participants. Clearly, a high level of interactivity is desirable; but, seldom is it possible to achieve a level of highly adaptive interpersonal interactivity parallel to that which can be provided by a live classroom.

Bandwidth requirements: Bandwidth refers to the rate at which the user’s Internet connection can transmit (upload) and receive (download) information. In designing an e-learning application, the temptation is to exploit every feature of the content. For example, viewing “movies”, if included in the lesson, is possible using a technique called streaming video. But, if the user does not have sufficient bandwidth, downloading and display can cause awkward pauses that may make the movie presentation jerky. Each e-learning method that developers contemplate should take into consideration the bandwidth connectivity available to their end users. Some interactivity options that work well with e-learning applications include interactive question/answer sessions, multiple choice quizzes and tests, on-line demonstrations and presentations. Whatever be the form and content in which the e-courses are offered there is a need to overcome some severe limitations as an ongoing process.

Cost of investment: Like any other delivery system, e-learning requires a certain investment on the hardware, software, and support staff. While much of the hardware/software investment may already have been committed as part of the organization’s existing Internet or intranet facility, there remains the need for ongoing investments in support resources to develop and maintain e-learning components. The financial integrity of the firm providing the e-learning should not be affected by poor number of end users and responders of the programme.

Infrastructural facilities: The companies offering the e-courses and those availing such courses should ensure the interactive process by establishing study centers in which there will be a course mentor to assist the students on a regularly scheduled basis. The problems of bandwidth shortage can also be overcome by equipping such study centers with sufficient capacity. Such study centers can also serve to conduct examinations and tests as needed in a reliable manner. Without such study centers, keeping track of the end users will become very difficult. To have a check on the users accessing the courses with fake ids and taking online tests in a fraudulent manner, a minimum face to face contact must be ensured. These study centers serve these purposes.

Social isolation: The reduced social and cultural interaction can be a drawback in e-learning. The impersonality, suppression of communication mechanisms such as body language, and elimination of peer-to-peer learning that are part of this potential disadvantage are lessening with advances in communications technologies. For instance, most established institutions have shied away from offering undergraduate degrees online, citing the campus experience, with its rich social milieu, as the best way to educate students who are fresh out of high school. Studies show that some students in online courses feel more isolated than typical students and are more likely to drop out. Advocates of online education counter that the classroom teaching can be boring for many college students. Just think of all those students dozing off in the back of the class, they say.

Quality standards: Yet another limitation is the lack of accreditation standards for virtual universities and unclear guidelines pertaining to the intellectual property...
rights for courses developed by subject experts and then mass marketed to students on the Internet. Generally the programmes offered fully or partly through the web are not accredited by standard accrediting agencies. There is a need for a policy either for accreditation mechanism for web based programmes or for a recognition process based on academic auditing for equivalence to similar approved courses. Without more rigorous standards and rules, some experts fear that these hi-tech institutions offering e-learning will become an automated education system that churns out digital diplomas at the expense of real education, while scholarly teaching becomes a software commodity that can be commercialized for profit.

Copyright and piracy: Another troubling aspect of online education is the issue of intellectual-property rights. With software as the tool and the Internet as the medium, one can always anticipate that in the not-too-distant future his/her knowledge may become a commodity that can be downloaded by hundreds or thousands of students and even by some publishing firms commercializing the courses for profit. Hence tough international protocol should be developed and also those rules have to be strictly followed by everybody. Though it is a herculean task to keep track and maintain the history of assessors of the contents of e-learning materials, it is still possible to manage them through collaboration with regional service providers.

Conclusion
The dangers associated with spurious courses are real and require well defined norms, standards and guidelines. The growth and success of e-learning is closely linked to the design of quality learning enabled through the use of technology. Instructional designers play the pivotal role of bringing together these disparate fields for the benefit of students, instructors, and organizations. Many of the concerns of online learning dropout rates, learner resistance and poor learner performance can be addressed through a structured design process. The resulting benefits such as reduced delivery costs, consistent look and feel, transparency, quality control, and standardization will make organizations think seriously on channel of e-learning and heavily invest in these facilities. The process of e-learning is under rapid evolution. There are severe constraints in taking full advantage of the opportunities available mainly due to the absence of approaches to their validation and recognition. Considering the current constraints and limitations and the reservations voiced on the value of e-learning, the prospects of it becoming a viable alternative to regular class-room learning is somewhere in the future. In the meantime it offers substantial scope for supplementing the knowledge and skill acquired through conventional systems.