E-Learning and Its Impact on Improving Technical and Higher Education Tier II Institutes in Rajasthan: Observations and Literature Review

Dr. Richa Yadav
Assistant Professor
Engineering College Bikaner

Abstract

"Education is what remains after one has forgotten what one has learned in school."
—Albert Einstein.
E-learning has started to merge with the technical and higher educational system which has significantly improved the task of knowledge accession and propagation worldwide. The success of e- learning programs does not depend on its effectiveness when it comes to the innovative modes of learning it offers to the student community. This can be observed in the institutions of Bikaner which have not been touched by the e-learning landscape and its advantages to that great extent. The importance of e-learning has been emphasized in research papers, but practical application is still inadequate.

Hence the aim of this study is to recognize the concerns related to e-learning and to provide strategies to overcome the issues. This paper will also inquire into the barriers or bottlenecks in the process of adoption of e-learning in technical and higher educational institutions in Bikaner, Rajasthan and compare them with those found in other institutions in India. The author has also suggested possible remedies to these barriers.

Keywords: E-Learning; Higher Education; Technical Education; Institution; Bikaner

Introduction

The emergence of e-learning and its importance in knowledge sector has become a major cause of concern for academicians all around the world as advancements in information technology aretaking place frequently. The initiation and development of e-learning happened in first-world countries, so the models and adoption methods developed by these countries to utilize and evaluate e-learning are considered a standard. It is important to note that the factors and barriers that impact the adoption in different regions can be different from the ones identified in the pioneer countries. The knowledge sector of developing countries is much distinct from the developed countries. As a result, the available models for adoption may or may not be applicable across every step and each phases the moment they are employed by culturally dissimilar societies and countries. There may as well be variance in the poignant factors and barriers on case-to-case basis.

E-learning is becoming more popular with widespread adoption in educational institutions around the world. A lot of research and debates are going on amongst the researchers and academicians regarding the e-learning adoption models and how they can be modified or applied in countries or institutions with much varied characteristics. Although, Indian citizens enjoy a high and moderate standard of living in metro and urban cities, India is way behind the other countries when it comes to literacy rates, adoption of new technology and innovation capabilities. Taking this into consideration, it is extremely important for the organizations and government to work hand-in-hand towards the updating and upgradation of the skills of the general public, be it employees, customers or students. The two should further provide continuous learning and training where a key role must be played by the e-learning methods.

The 'e' in 'e-learning' stands for 'electronic' and together the full-form of the term is 'electronic learning'. The NCSA e-Learning group defines e-learning as "the acquisition and use of knowledge distributed and facilitated primarily by electronic means. This form of learning currently depends on networks and computers but will likely evolve into systems consisting of a variety of channels (e.g., wireless, satellite), and technologies (e.g., cellular phones, PDAs), as they are developed and adopted. E-learning may incorporate synchronous or asynchronous access and may be distributed geographically with varied limits of time". Koohang& Harman defined e-learning as: "The delivery of education (all activities relevant to instructing, teaching, and learning) through various electronic media. The electronic medium could be the Internet, intranets, extranets, satellite TV, video/audio tape, and/or CD ROM."

Methods of E-Learning

There are various modes in which e-learning can be adopted in classrooms and some of them are described below:

1. **Usage of PowerPoint Presentations**

The most important part of the learning process is making the learner understand the concept, theory, or philosophy in an extremely effective way. In this regard, the overall learning capabilities of the students and learners can be greatly enhanced with the aid of PowerPoint presentations. In fact, a faculty with lesser experience of making presentations can easily utilize PowerPoint presentations prepared by an expert in the field of study to deliver powerful lectures. A professional degree can be attained by student with PowerPoint presentations getting delivered according to a prescribed curriculum.

2. **Animations/ Multimedia**

Animations and multimedia are the best ways for transferring information to the professional students. Complex concepts, processes and diagrams can be more easily understood using animation. Adoption of this method will also lead to improvement of teacher's efficacy of teaching as a result of clear transfer of knowledge and information.

3. **Audio/Visual Aids**

Simplification of the delivery mechanism should take place if audio-visual aids are utilized. Core content can be effectively delivered leading to enhanced learnability skills of professional students.

4. **Projector/LCD**

Projectors/LCD screen in lecture halls do a commendable job for transfer of information to learners while maintaining high quality standards of the teaching process. The student community is often perplexed by the learning problems and challenges posed by complex and difficult concepts, but these problems can be easily and effectively dealt using

projectors/LCD screens and the same would also result in higher credibility of technical and analytical skills among students.

5. Laptop/ Desktop Computer

It has been observed in a lot of educational settings that, value-addition happens in the content with the aid of laptop/computer leading to orientation of the professional students as per the prescribed academic curriculum. Completion of syllabus is more effective and efficient with these aids. As a result, the students might be able to maneuver the plethora of technical and work challenges in their career paths if this technology is adopted at present.

6. Internet/World Wide Web

The modern technology has given birth to internet/world wide web. Internet can be considered a stimulus to the learners, the result of which is, getting more clarity on difficult concepts as now aid and content is easily accessible to the students because it's only a click away.

7. Virtual Classrooms

Work based approach is much more advantageous than classroom-based approach in terms of the opportunities it offers. The absence of real workplace can be addressed with the help of case studies, stimulations, and activities under the supervision of industry representatives. The relevance of these activities can be ensured if they are planned out in close connection with the industrial experts. Digital infrastructure plays a crucial role in this mode as it provides an effective medium for dissemination of information and knowledge. Its flexibility is commendable, and the content taught by instructors using technological applications like smartboards are not only convenient to use but the content shared is also saved and can be retrieved at any point of time. Delivery of the content becomes easier and teaching-learning process gets enhanced. It also makes possible the teaching to go on without physical presence of the instructor in the classroom if there is a supervisor who can clear out the learners' doubts and create greater understandability.

8. Webinars

Webinars have become a popular mode and even first step towards the adoption of virtual classrooms as they are organized by established educational institutions in great numbers. Webinars are essentially online seminars, utilized by experts in various fields for dissemination of their knowledge and information to students in an effective way without engaging in physical contact. Institutions can easily harness the services and resources provided by experts using this mode. It is also very timesaving and can be considered as one of the effective modes of teaching.

Benefits and Drawbacks of E-Learning

Western and developed countries have clearly shifted towards e-learning because of its various advantages. Although its advantages and appreciation are almost impossible to ignore and so obvious to eyes, it has also become a matter of fact that computer systems can never replace the human teachers and instructors. Regardless of that, it is imperative to point out the benefits offered by this technological advancement in knowledge sector. Some of the well-recognized benefits are as follows:

- Reduced costs – salaries, commuting costs, rent etc.
- Easier access to quality learning
- Convenience
- Flexibility
- Environmentally sustainable due to less paper use and power consumption
- Greater understanding and retention

E-learning still has following weaknesses and scope for improvement with advancement of technology.

•   Peer to peer and student to teacher interaction is reduced as now instructors and learners do not have to be physically present in a room together and the courses are available to learners 24/7.

•   Feeling of isolation and unsupported may prevail as the learners cannot access the instructors as much as they could during traditional classroom lessons.

•   Boredom.

•   Problems in technology and glitches may become a hindrance.

•   Having access to technological resources like internet and computers is not a luxury that many can afford.

Barriers to E-Learning Adoption

Review of literature on e-learning provides evidence on the importance of information technology in the knowledge sector. It is a common understanding of organization and institutions that e-learning cannot be a separate domain but in fact, it needs to become an integral part of the day-to-day tasks of students and workers. Considering this argument, e-learning can be seen as an advantage of strategic importance which will help in achieving the long-term organizational goals. Model of e-learning development that prevails in developed countries is shown in Figure. 1.. The key factors that result in adoption of e-learning initiatives are two and these are the same factors that have resulted in rapid advancements happening in the technological domain – changing environment and changing/upgrading technology. These two trends have led the realization in academicians of top institutions and even pressurized them into utilizing IT to improve and enhance their offerings to learners at large. This pressure results in the emergence of decision to implement e-learning.
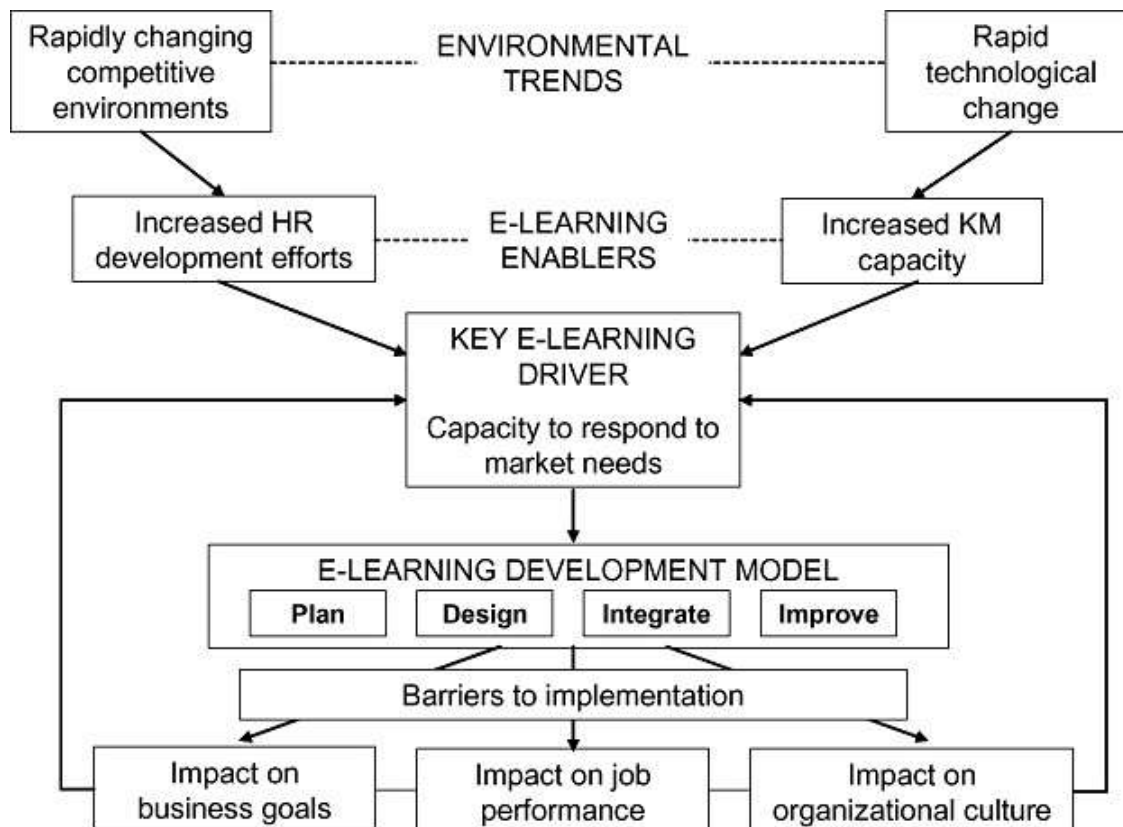

Figure 1

Development Model of E-Learning

The phase between taking the decision to implement e-learning and how it impacts the organization is where the barriers and bottlenecks can be found. Implementation of e-learning is a model very similar to implementation of any other technology. It has four steps: to plan, to design, to integrate, and to improve. In the third step, the system is finally placed in the organization so the workers/learners can interact with it. In the fourth and final step, the impact of the system on the organization is evaluated on the basis of the achievement of organizational goals and objectives, enhancement of learning process and effects on the organizational culture. Although, technology critiques often promote to review a technological system in a balanced way, what is less discussed is the disadvantages and harmful effects brought by new technology in question. The aim of pointing out the negative parts and barriers is not to demotivate organizations from adopting new technology, but it is to create more awareness and clarity about the issues and problems that are faced by early users when they are only beginning to make sense of how everything works. This evaluation is very crucial, especially in cases where huge investment must be made, and the technology needs to live up to the promises and expectations.

The various barriers in adoption and implementation of e-learning as identified by research scholars can be personnel issues, organizational issues, or technical issues. Personnel issues are intrinsic to the individuals – be it students or employees, and can range from time management difficulties, language barriers, variances in the learning and teaching styles, attitude problems, or variance in the preferences of individuals on whether they prefer active or passive learning. Organizational barriers could be lack of awareness, support from management and strategic planning, time for training and learning, absence of relevant content, evaluation, incentives, and credibility. Technical barriers range from infrastructure related problems, connectivity problems, poor accessibility and usability, to lack of IT support personnel.

The key barriers, after thorough assessment of literature, have been grouped up in four major categories: cost, time, management and attitude. Cost is one of the most important barriers in the adoption of e-learning. Adoption of technological tools and equipment is at the core of e-learning, and it is also expensive, requiring huge investment for implementation and costs arising for maintenance activity. Time is very important in both educational and business aspect and in this context, it refers to the time it takes for people to become familiar with the technology implemented and utilize it effectively. External interruption and points of distraction come under the broad group of time barrier which make it difficult for learners to completely focus on e-learning, making time barrier one of the most significant barrier in adoption of e-learning.

Technology is another crucial barrier in adoption of e-learning. Both the organization and the learners have to adjust to it. . For effective implementation of e-learning, an organization must ensure that they have both the capacity and software and hardware capabilities to run sophisticated e-learning tools and systems. Software, bandwidth, and connectivity issues are few other problems and complete breakdown of the system is another. IT support becomes major issues as personnel need to be hired if the manufacturers of hardware and software do not provide aftercare services. This might also result in reluctance from individuals in utilization of these tools. Attitude of individuals towards implementation and utilization of e-learning is another important barrier as the end-users need to accept the system in their day-to-day tasks and feel supported by the management wherever necessary. In case, they feel like the e-learning tool is not helping them as much as its creating problems or they are just unable to understand how it works and how to use it, the people will not become comfortable with it. If the people fail to utilize the system effectively or avoid using it whenever possible, the system and all the efforts made to implement it will go in vain.

Conclusion

Phenomenal changes are happening in the technical and knowledge sector nowadays. It is of utmost importance that institutions, especially the ones providing technical education, must take initiative to make reforms with the adoption of more innovative and sophisticated methods of teaching and learning as it would benefit everyone and lead to enhancement of learning quality. Techniques listed in this article when combined with a relevant and accurate content delivery system can result in rise in the amount of information shared and interaction. These modes and methods increase the effectiveness of the teaching-learning process to great extent. In the future, they also have potential to completely replace the traditional teaching methods, resulting in increase in the effectiveness of technological knowledge dissemination and solutions to the challenges that the learning community face while utilizing the traditional methods.

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