E-Learning Effectiveness in Higher Education

Monica Trakru[1], Tapan Kumar Jha[2]

[1,2]Assistant Professor, Gitarattan International Business School, Delhi, India

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ABSTRACT - *Effectiveness of education system depends on the level of quality it displays. Traditional learning methods like classroom teaching and distance learning have their own limitations. It is becoming difficult to preserve the standards of education because of limitations of finance, infrastructure, and other resources including skilled and experienced human power. Learning provided through Information Technology (IT), to some extent ensures high quality learning by providing necessary information at a convenient place and suitable time. It is clearly observed that e-Learning emphasizes on quality and effective presentation of information. This paper, studies the effectiveness of e-Learning as it relates to the e-Learning experience of students undertaking higher education. More specifically the study deals with evaluating the effectiveness of e-Learning across gender, course and city.*

Keywords: Information Technology, e-Learning, Effectiveness, Electronic, Internet

1. INTRODUCTION

On line learning or e-learning has resulted in a paradigm shift in the field of education. e- Learning system is a powerful tool for achieving strategic objectives of the university (teaching, research and serving the society) and it contributes to the progress on the institutional level as well as the personal level, including both faculty and students (Divjak and Begicevic 2006). E-Learning does help widen the scope of education and can prove to be a vital asset, provided of course it is *'effective'*.

E-learning is defined as web based learning that involves the integration of the Internet with learning. Welsh et. el. (2003) said that e-Learning or electronic learning is known as instructional content or learning techniques eased by electronic technology and it aims at increasing the expertise, overall knowledge and productive capabilities of the learners in a global situation. Stockley (2003) defined E –Learning as the means of delivering of a training or education program by electronic means. It essentially encompasses the use of a computer or electronic device such as mobile phone, in some way to endow training, education or material for learning.

The paper aims to study the effectiveness of e-Learning particularly in higher education institutions. The study majorly focuses on evaluating the effectiveness of on line learning primarily across gender, course and city.

2. LITERATURE REVIEW

The traditional educational delivery system in universities and colleges has for a relatively long period of time been a classroom with a professor giving lecture to students and the students listening and sometimes taking notes. Communication between the professor and students has been thought of to be a vital learning component in this delivery method. Innovations in educational delivery mechanisms such as interactive and reflective schools of thought have, however, challenged the traditional approaches to education (Janicki, T., Steinberg, G., 2003). Progress in information technology has enabled new educational delivery methods such as distance learning and e-Learning. As a result of this, many universities and colleges have joined this innovative e-Learning world. This has led to the need for pedagogical and technical knowledge to teach using the Internet, and this knowledge is gradually becoming a core competence for many teachers as well as students. Given the propagation of electronic supported teaching, the crucial question here is that how and to what extent e-Learning is changing the quality of teaching and learning.

E-Learning has entered the education as well as the corporate world in a major way and it also complements the traditional delivery methods. It has definitely facilitated the conventionally complex paradigms of education like adult learning and distance learning. E-learning can be viewed as an alternative to the face-to-face teaching method or as a complement to it. E-learning usually allows the student a greater choice as well as responsibility for their own learning (Vrasidas, C., & McIsaac, M. 2000). E-learning can change the methods of learning and has the promise to overcome the barriers of time, distance, and economics (Collis, B, 1998). E-learning is an invaluable gift to the education sector. It has completely removed the distance barrier and made learning a convenient and pleasant affair. Studies indicate that e-Learning can help increase student engagement, motivation and attendance, which are the significant

prerequisites for learning. Effective e-Learning can also lead to enhancement in performance of major subjects and promote the growth of required skills to meet the challenges of 21st century.

There are number of research studies to suggest that e-Learning can definitely improve the marks scored by students. Boumedyen et el(2011) found that classes that incorporate use of software and computers while teaching has significant effect on marks even without taking online examination. Secondly, the marks obtained by those students who use multimedia in the classroom even if no other software is being used and the students correspond with the trainer through mail and appear for on line examination, is higher than the students for whom multimedia was not used. Thirdly, the marks scored by the students was the best who were neither taught through books in the classroom nor with the help of physical models but instead were taught with the help of a software and the students communicated with the instructor on mail. Largely, the findings demonstrate that teaching without the use of books gives better results and also improves the performance of the students. (Kiboss, 2000; Wekesa, 2003; Kiboss & Ogunniyi, 2005) found that students who have used dictation web based e-learning programs had made better progress in dictation as compared to students who have used the traditional method. This was supported by Zarabian et. el. (2010) who concluded that to enhance student's dictation learning quality, planners of education must channelize their efforts to design web based programs and integrate the curriculum with computers and the Internet. So, the conclusion which can be drawn is that the application of e-Learning as a knowledge device causes students learning quality improvement in dictation. The use of on-line learning programs enhances the cognitive and psychomotor skills of students. The use of electronic learning improved the students understanding of concepts, their problem solving and calculating skills, and computer operational skills as well.

Web-based network has provided effortless and straightforward access to educational resources for learners everywhere and at every time, even in far-flung areas by creating home schools, and thus has caused educational justice (Buckley, 2008). This multimedia environment and the opportunity of converting data in the form of sound, images, text, video has generated interest and enthusiasm in learners. The other benefits of e-Learning are peer involvement, autonomous learning, interactive, fast response. To sum it up by using this method, teachers are now not only source of knowledge transfer but their role has become that of educational facilitators as well. Consequently, many educational institutions in recent years are using this technology to improve learning with less time (Adelman, 2005).

Although there are several benefits associated with e-Learning but those benefits can only be gained, provided e-Learning is effective. There are number of studies which give important suggestions for evaluating effectiveness of e-Learning. Shank (2003) refers to methods by which to evaluate the effectiveness of external e-learning training programmes. Her research lists the measures of effectiveness, the primary measure being learning gains in regards to student performance. The other measures of effectiveness include a examination and test scores and course completion rates, which provides an overall indication of course-success in respect to student.

A study by Olds (2004) suggests that the best way to decide what evaluation means is to commence by exploring a collection of methods and then later finalizing which of these methods best suits the programme goals. Other studies meanwhile suggest the possibility of combining many techniques to fulfill the required motive. Finally whatsoever the approach chosen, the main point is that there is not likely to be one supreme method and so the training managers and educators should focus on what is most suitable and practicable rather than what is most applauded.

3. OBJECTIVES OF THS STUDY

The study aims to analyze the effectiveness of e-Learning in higher education in India. The students researched were pursuing their masters in business administration and masters in computer application. The students were having knowledge about e-Learning and were actually being taught through e-Learning as well. The research would help us to understand whether e-Learning is an effective tool for learning in India, particularly in case of higher education. The objectives are:-

- To find whether e-Learning effectiveness varies with the course the student is undertaking?

- To find whether e-Learning effectiveness varies across gender?

- To find whether e-Learning effectiveness varies across cities?

4. RESEARCH METHODOLOGY

4.1 RATIONALE OF STUDY

India, a rapidly growing nation, is the second largest populated country in the world. Education is the prime thrust of the government. With the vast expansion in the education sector many institutions have started offering education to their students through on-line media along with the traditional method of education. The infrastructural costs for e-learning are really high that is why most of the institutions stick to the traditional methods. In order to know whether e-Learning is better mode of deliverance, the present study has been conducted to find the effectiveness of e-Learning with special reference to higher education in India.

4.2 SCOPE OF THE STUDY

The research was conducted in institutes offering higher education in New Delhi and Ahmadabad (India). The institutes have been imparting education to the students through e-Learning along with the formal class room teaching.

4.3 ABOUT SAMPLE

Both the cities Delhi and Ahmadabad are Tier-I cities as per classification done by Sixth Central Pay Commission in 2008.

4.4 HYPOTHESES OF STUDY

- **$H0_1$:** There is no significant difference in the effectiveness of e-Learning among students undertaking different courses in Delhi.
- **HA_1:** There is a significant difference in the effectiveness of e-Learning among students undertaking different courses in Delhi.

- **$H0_2$:** There is no significant difference in the effectiveness of e-Learning across gender in Delhi.
- **HA_2:** There is a significant difference in the effectiveness of e-Learning across gender in Delhi.

- **$H0_3$:** There is no significant difference in the effectiveness of e-Learning among students undertaking different courses in Ahmadabad.
- **HA_3:** There is a significant difference in the effectiveness of e-Learning among students undertaking different courses in Ahmadabad.

- **$H0_4$:** There is no significant difference in the effectiveness of e-Learning across gender in Ahmadabad.
- **HA_4:** There is a significant difference in the effectiveness of e-Learning across gender in Ahmadabad.

- **$H0_5$:** There is no significant difference in the effectiveness of e-Learning among MBA students across the cities.
- **HA_5:** There is a significant difference in the effectiveness of e-Learning among MBA students across the cities.

- **$H0_6$:** There is no significant difference in the effectiveness of e-Learning among MCA students across the cities.
- **HA_6:** There is a significant difference in the effectiveness of e-Learning among MCA students across the cities.

- **$H0_7$:** There is no significant difference in the effectiveness of e-Learning among male students across the cities.
- **HA_7:** There is a significant difference in the effectiveness of e-Learning among male students across the cities.

- **$H0_8$:** There is no significant difference in the effectiveness of e-Learning among female students across the cities.
- **HA_8:** There is a significant difference in the effectiveness of e-Learning among female students across the cities.

- **$H0_9$:** There is no significant difference in the effectiveness of e-Learning across gender.
- **HA_9:** There is a significant difference in the effectiveness of e-Learning across gender.

4.5 SAMPLE DESIGN

A stratified sampling technique was selected to collect the data. The sample consisted of 120 students, 60 students from Delhi and 60 from Ahmadabad. Out of the 60 students sampled in each city 30 students were pursuing their masters in business administration and 30 were pursuing their masters in computer application.

4.6 RESEARCH TOOL

Data was collected using self designed questionnaire which was on the 5 point Likert scale from strongly disagree to strongly agree.

5. DATA ANALYSIS

The data was analyzed using t-test and z-test.

6. RESULTS

- The null hypothesis ($H0_1$) is accepted. There is no significant difference in effectiveness of e-Learning among students undertaking different courses in Delhi as the t-value is not significant
- The null hypothesis ($H0_2$) is accepted. There is no significant difference in the effectiveness of e-Learning across gender in Delhi as the t-value is not significant.
- The null hypothesis ($H0_3$) is accepted. There is no significant difference in the effectiveness of e-Learning among students undertaking different courses in Ahmadabad as the t-value is not significant.
- The null hypothesis ($H0_4$) is accepted. There is no significant difference in the effectiveness of e-Learning across gender in Ahmadabad as the t-value is not significant.
- The null hypothesis ($H0_5$) is accepted. There is no significant difference in the effectiveness of e-Learning among MBA students across the cities as the t-value is not significant.
- The null hypothesis ($H0_6$) is accepted. There is no significant difference in the effectiveness of e-Learning among MCA students across the cities as the t-value is not significant.
- The null hypothesis ($H0_7$) is accepted. There is no significant difference in the effectiveness of e-Learning among male students across the cities as the t-value is not significant.
- The null hypothesis ($H0_8$) is accepted. There is no significant difference in the effectiveness of e-Learning among female students across the cities as the t-value is not significant.
- The null hypothesis ($H0_9$) is accepted. There is no significant difference in the effectiveness of e-Learning across gender as the z-value is not significant.

7. RESEARCH LIMITATION

The sample size taken was less which significantly limits the researcher's ability to make broader generalizations from the results (i.e. the researcher's ability to make statistical inferences from sample to the population being studied)

8. IMPLICATIONS

The study is valuable in providing support for previous research in addition to some new findings. The sample is only from two courses and from management schools located in two cities. Obviously, this study should be replicated to other schools and with other courses and cities to determine whether the results hold true in these different contexts. The researcher was also unable to study all the possible variables that impact the effectiveness of e-learning environments. Future research could expand upon the hypotheses to determine what other factors may impact e-Learning effectiveness. The research can further help in developing and evaluating e-Learning theories. It can also help course designers and educators in designing their course and formulating new strategies.

9. CONCLUSIONS

The present study found that in contemporary education system it is important for institutes to use an online method which provides flexibility to the students and also boost their learning. It is apparent from the results of this research that e-Learning has been willingly accepted by students as a source of reference and academic illumination. The interesting and enlightening finding that has come up is that female students are equally effectively using e-Learning when compared to their male counterparts. This finding can be supported by (Razaq Raj, 2009) who found that female students were equally active in engaging with e-learning tools. There are several reasons that could be attributed to this trend such as more dedication towards learning and achieving a higher grade in females. It can also be due to the fact that nowadays in developing countries like India females are getting almost equal opportunities for education and technology usage.

The effectiveness of e-Learning does not change with the course the student is pursuing. MBA and MCA students are equally comfortable with the usage of technology for learning.

The effectiveness of e-Learning does not vary with the city. Since the sample was from Delhi and Ahmadabad

cities and both are equally advanced technologically. It is likely that the results may differ in case the samples are from A class and C class cities.

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