Study on Opportunities and Challenges of E-Learning System: Management Students' Perspective in Pune city

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Abstract

There is ever changing development in the area of information technology (IT), which is also seen in education sector, as that of other sectors, which has led to the expansion of newer teaching and learning methodologies at different institutes and universities. Introduction of E-learning programs at different institutes and universities requires huge amount of preparation for effective delivery as well as to achieve the objectives. This study was aimed at evaluating various challenges of e-Learning system through the students of different management institutes in Pune city.

This research conducted was a descriptive and cross-sectional study involving the management students as statistical populations in those management institutes, where some or the other form of e-Learning system is implemented. The study involved 354 students from first and second year of management program, who were selected using simple random probability method of sampling. The required data was collected using a structured questionnaire and analyzed using graphical method as well SPSS19 software.

The data collected and analyzed by the researchers, revealed the findings of this study stating that, about 45% participants still are in the favor of blended learning, as a large proportion of study population (71%) do not have their own laptops or PC's at the place where they are taking up their higher education. Even if a minimum required ICT infrastructure is available in

most of the management institutes in Pune city, only around 30% of the teaching faculty were using the e-Learning methodology regularly. If a culture of peer learning & initial e-Learning experience is improved, there will be a good acceptance of e-Learning in days to come, which can provide convenience and effective e-Learning to the students of higher education program.

Keywords

E-learning, E-learning Content, Content Development, Challenges, Information and Communication Technology

Introduction

The faster technological changes in ICT is also forcing the education system even in higher education programs such as management. The progressive development of ICT infrastructure and increased affordability of digital equipment, affordable access to free (large volume) internet data, brought huge knowledge and information at the fingertips of the users including the student and faculty community. The knowledge in higher education programs is limitless, crossing the boundaries of classroom and combination of real world with virtual world is making the deliverable more appealing. Certain limitation of distance,

time, geography etc. are removed by the ICT for exchanging the knowledge between the faculty and students and within the students' community. This is also fueled by the rapid development of computer and mobile technology; World Wide Web is contributing to the expansion of distance/virtual learning. The technology adaption is not limited only to education but is actually contributing in the economic development of global market at an unimaginable pace[1]. The advancement in the ICT helped to increase effectiveness and efficiency of e-Learning system that has changed the way of learning methodology that gave rise in distance and online learning programs for the convenience of those professional students to get certification and degrees of their choice, which otherwise due to time and distance constraints, was not possible for them, and also by overcoming certain complications of traditional classroom learning methods[2].

E-Learning

E-learning is simply the use of Information and Communication Technology for delivery of knowledge, training & education to the learners. ICT has a potential of making the education to be accessed to anyone, anywhere, anytime, by providing customized as well as variety of

programs and contents matching to the need of the learners, by providing quality of educational content which can be updated constantly using Learning Management System (LMS). The development of ICT in education sector, have contributed to the growth of E-learning market exponentially, worldwide, it showed a growth rate of 35.6% with a new paradigm of shift from traditional to modern education system. In the other words, the constant development of ICT has resulted in more cost effective and efficient methods of learning as compared to traditional methods of learning[3]. Andragogy i.e. adult learning method requires interactive learning and e-Learning provides to a good extent, interactive learning platforms such as audio-visual tapes, computer, compact drives and satellite broadcasting with the help of the internet. Actually in the mid of 90's, e-Learning courses and plans have been started with the enhancement of teaching method process rather than traditional teaching methods[4].

Literature Review

The main objective of e-learning is to construct and deliver knowledge which is electronically mediated for achieving asynchronous and synchronous communication with the learners crossing the barriers of time, space and geographical boundaries (Garrison et al., 2003; Robinson and Molenda, 2008)[5,6]. The incorporation and adoption of learning environments using electronic learning methods are facing challenges mainly related to the cultural, pedagogical, and information & communication technology (Andersson 2008)[7]. There has to be a long term commitment to the development of e-Learning system, which is one of the ICT related biggest challenge, needed to be considered. Another biggest problem is not having any effective control on the learners to stop then leaving the e-Learning system due to mismatch with their expectations or other reasons, making us to understand that the initial experience should result in highest degree of student satisfaction. (Sun et al., 2008)[8]. Along with the learner's satisfaction, there are many other factors, which are crucial that affect learners perceived satisfaction are, awareness of technology, anxiety or comfort level of learner with the computer system, acceptance to e-Learning methods, attitude of the instructor towards e-Learning deliverables, flexibility of e-Learning courses, quality, perceived ease of use, perceived usefulness of the course content to the learner, and diversity in assessment methods & moreover the level of motivation of the learner(Selim, 2007; Bhuasiri et al., 2012)[9,10].

Methodology

This research study conducted was a descriptive cross sectional one which included the statistical population as management students studying in different private management institutes in Pune city. The researcher included structured questionnaire to collect quantitative and qualitative data by interview method. Around 510 management students from 39 management institutes in Pune city were identified to be included in the study using simple random probability method of sampling, to whom research team tried contacting to collect the data, ended with 354 completely filled questionnaire, which were included for analysis of data using SPSS19 software. The researchers also have reviewed articles related to e-Learning, distance and online learning system to get the related secondary data, which can be helpful for theoretical context and meeting the objectives of the study. The content validity and reliability of the questionnaire was measured by conducting a pilot study was determined by internal consistency and reliability. The questions included in the questionnaire were related to challenges of E-learning system, infrastructural challenges, financial challenges, challenges of skills, knowledge to use and to access to required technology.

Objectives of the Study

Since the study is aimed at evaluating factors related to e-Learning and ICT enabled e-Learning methodology for effective and convenient delivery of course content, following objectives were included in the study.

1) To study the challenges related to ICT infrastructure that affects the e-Learning system.

2) To study the challenges related to the students' community that affects the e-Learning system.

3) To study the challenges related to the teaching community that affects the e-Learning system.

4) To find the opportunities available for the e-Learning system in the future.

Hypothesis

1) **H_1:**

    There is a significant relationship between knowledge of technology and acceptance of e-Learning system.

2) **H_2:**

    There is a significant relationship between the peer support and acceptance of e-Learning system.

3) H₃:

There is a significant relationship between the initial learning experience and acceptance of e-Learning system.

Scope & Limitations of the Study

The study targets only to the students who are taking higher education specifically management courses only in Pune city, hence the perception of students may vary from the perception of students taking other higher education courses. Study is conducted with the view of understanding only the perception of students towards effectiveness and acceptance of e-Learning module by the management students, related opportunities and challenges of e-Learning module, other factors that are directly or indirectly associated with e-Learning are not included in the study, which remains as scope for further research.

Result & Discussion

The study included a total of 354 respondent management students studying in different management institutes in Pune city. Out of total respondents, 216 were the female students (61%), while remaining were the male respondents (138), in the total respondents, 189 respondents were doing PGDM course, while 165 students were doing MBA program from Savitribai

Phule Pune University affiliated colleges. From the total respondents, only 103 (29%) respondents were having their own laptops or Personal Computers with them, though 100% of respondents were carrying internet enabled smartphones with them.

PC/Laptops/Smartphones with Students
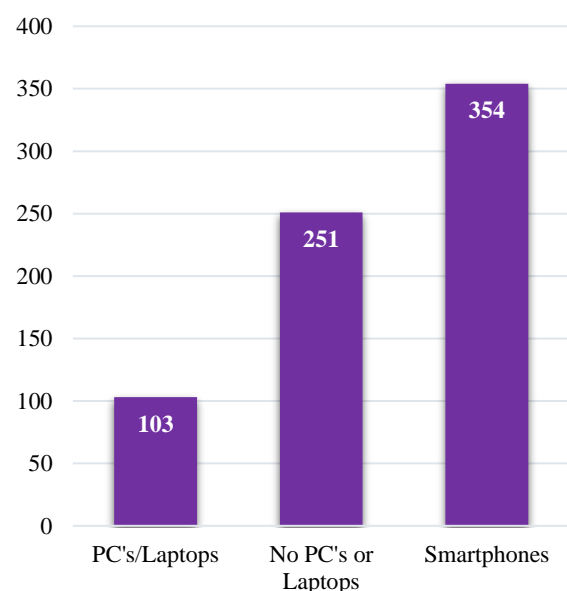
Graph No. 1: Availability of PC's/Laptops/Smartphones with Students

Use of ICT Infrastructure:

When asked on availability of ICT infrastructure such as hardware, software, peripheral equipment etc. supporting to e-Learning in the institutes of respective respondent students, following responses obtained as shown in the graph.
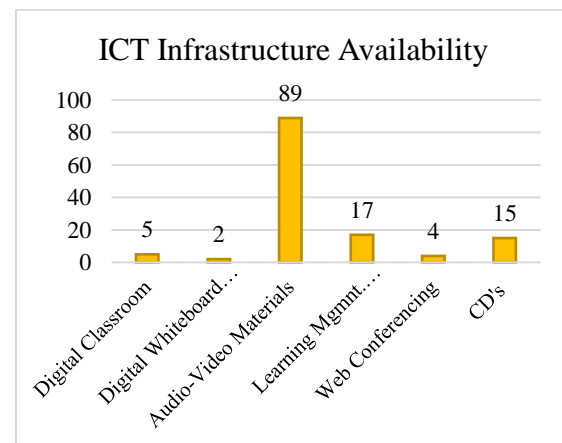
ICT Infrastructure Availability
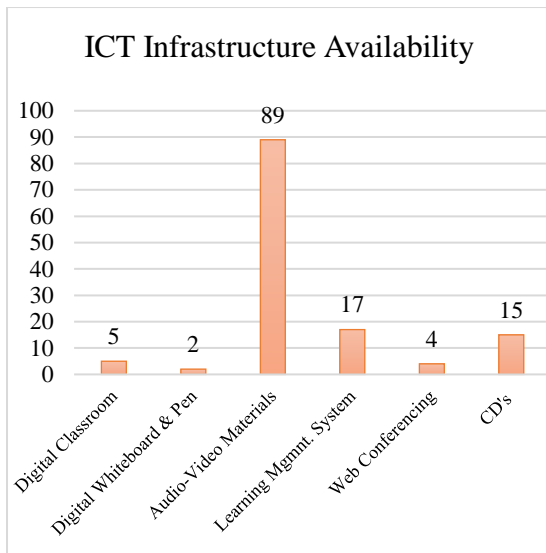
Graph No. 2: Use of ICT Infrastructure in Management Institutes

Out of the total respondents, around 348 respondents mentioned to have internet enabled computers/laptops in their institute for the use of students, while 314 respondents (88.7%) mentioned to have LCD projectors used by the faculty members for delivery of their sessions with the help of combination of MS Office tools such as word/excel/ppts/pdfs/AV materials. Around 93 student respondents mentioned to have soft copies of books in the form of CD's in their library, while 217 students mentioned to have technical support in their institute during lectures as well for the students.

Availability of ICT Infrastructure in Institute:

As per the data collected from the student respondents, only in 5 institutes have digital classroom, while only 2 institutes have digital whiteboard along with digital pen. Around 89 students mentioned that their faculty members make use of audio-video teaching content to deliver their sessions. Out of the 39 selected institutes, only 17 institutes have their own learning management system for delivery of their e-Learning content.

ICT Infrastructure Availability

Graph No. 3: Availability of ICT Infrastructure in Institute

Out of 39 institutes included in the study, only 15 institutes do have CD's subscribed for journals, books, articles etc., while only 4 institute has a facility for web conferencing. This clarifies, many of the institutes are still lacking of having ICT infrastructure due to varied reasons.

**Skills and Knowledge of Users**:

When asked on ability of faculty members in the selected management institutes towards use of ICT infrastructure, the responses shown were as only 30% of the

faculty were regularly using e-Learning materials and infrastructure, while 43% of the faculty members were using occasionally and remaining faculty members i.e. 27% were still not using ICT infrastructure to deliver in their classes, it may be due to lack of knowledge and skills of use of technology.

On students' side, when it is asked to the respondents, though 100% of the respondents are using smartphone extensively for various multimedia functioning, still 41% of the respondents were not comfortable of using ICT enabled e-Learning resources.

**Teaching Methodology Convenient for Students**:

When asked for teaching methodology, the responses obtained from the students were as summarized in the following graph no. 4. It is clear from the graph that, though the mobile technology and utility has increased among the young population, still only 31% of respondents were found to prefer completely e-Learning methodology, while a large number of respondents (45%) still likes a combination of e-Learning along with traditional method of classroom learning. Awareness and training of students towards use of computer technology for use of e-Learning resources is more likely to be done.

Learning Methodology
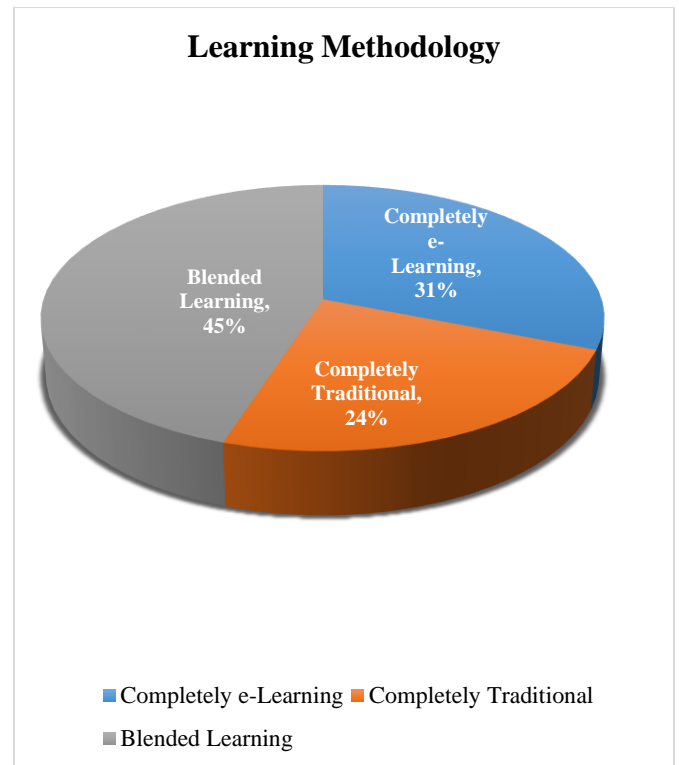
Graph No. 4: Acceptance of Learning Methodology by Students

Research Model Construct:

Hypothesis designed by the researcher considered 3 factors that affects the acceptance of e-Learning module by the management students.
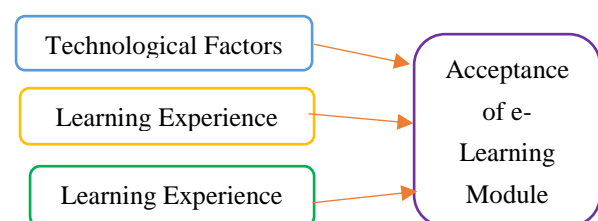
Hypothesis Testing:

The data collected to test the hypothesis was sorted, tabulated and applied statistical

tests using SPSS 19 software. A pilot study was conducted on 48 respondents and the Cronbach alpha value showed satisfactory for internal consistency of data collected.

Construct	Cronbach Value
Technological Factors	0.63
Peer Support	0.69
Initial Learning Experience	0.73

Table No.1: Cronbach Alpha Value

H₁:

The acceptance of e-Learning by the management students depends upon, their knowledge of how to use the technology. The factors related to knowledge of technology which were included by the researcher were student's knowledge of technology, ease of handling of infrastructure, technical support, training of students, support by teachers etc. The responses obtained by the researcher were as follows:

Factors	student's knowledge	ease of handling	technical support	training of students	support by teachers
Mean	3.121	2.861	3.898	3.688	3.837
SD	1.397	1.230	1.244	1.320	1.241

Table No. 2: Mean and SD's of Technology Knowledge Factors

Multiple Regression analysis was performed to test the hypothesis to find relationship between independent and dependent variables. Hypotheses tests results were as enumerated in Table No. 2. The F-statistics produced (F=27.54) was significant at 5 % level of significance, thus confirming the fitness for the model.

Model Summary

R	R Square	Adjusted R Square	SE	F
.722	0.622	0.618	2.46406	27.54

a. Predictors: (Constant), Teacher Support, Technical Support, Student Training, Student Knowledge, Ease of Handling

Table No. 3: Multiple Regression Output

Output thus shows that, there is a statistically significant relationship between the five factors (student's knowledge of technology, ease of handling of infrastructure, technical support, training of students, and support by teachers) and acceptance of e-Learning system.

The coefficient of determination R^2 was 62.20%. Thus, these five factors can significantly account for 62.20% towards acceptance of e-Learning system.

H₂:

To test second hypothesis, researcher applied one sample t-test, to find how the peer support encourages management students towards acceptance of e-Learning system in their institute.

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
Peer Support	354	3.3729	1.23084	.06542

Table No. 4: One Sample Statistics

The test statistics shows t value as 51.559 & 353 as the degree of freedom, and the corresponding significance value 0.000, at 5% level of significance, rejects the null hypothesis, hence the researcher concludes that, if a peer support is provided to the students, that will encourage acceptance of e-Learning in the management students of Pune city.

One-Sample Test						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Peer Support	51.559	353	.000	3.37288	3.2442	3.5015

Table No. 5: One Sample t-Test Output

H₃:

One sample t-test used to test third hypothesis, researcher again applied, to find how the initial learning experience affects acceptance of management students towards e-Learning system in their institute. The test statistics shows t value as 45.031 & 353 as the degree of freedom, and the corresponding significance value 0.000, at 5% level of significance, rejects the null hypothesis, hence the researcher concludes that, if an initial experience of students is good, that will encourage acceptance of e-Learning in the management students of Pune city.

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
Initial Exp.	354	3.3192	1.38684	.07371

Table No. 6: One Sample Statistics

One-Sample Test						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Initial Exp.	45.031	353	.000	3.31921	3.1742	3.4642

Table No. 7: One Sample t-Test Output

Thus from the data analysis and output of hypothesis testing, researcher supports following findings.

Challenges in E-Learning Acceptance:

1) **Training to Teaching Staff:**

   Since most of the faculty are having an experience of traditional teaching-learning methodology, it will be quite difficult for them to fully adapt and implement e-Learning system. Hence to make them support and implement e-Learning, the institute must design training program, which will make them technologically sound to make use of e-Learning system effectively and efficiently, which will further encourage students to accept e-Learning.

2) **Financial Challenge:**

   Since the development of e-Learning related ICT infrastructure requires initial cost as well upgradation cost is also associated with the lapse of time, this will be a big financial challenge for the institutes. The investment will be also a continuous for training and development activities

3) **Technical Support:**

   Institute should have a technical support of IT engineers, who can support teaching faculty members to develop and upload content on their LMS and they should also guide students on how effectively these contents can be accessed.

4) **Learning as a Continual Process:**

   There is constant development in the ICT, hence there has to be continual organization of training program related to change in technology to the teaching staff, technical staff as well as of the students.

5) **Content Development:**

   Since the management field is application in all business environments, which is constantly changing, hence the content developed, needed to be upgraded constantly matching to the recent trends in the management field.

6) **Learning Experience:**

   Since the traditional learning is face-to-face, synchronous learning, where real time learning experience can be provided to the students, which is the big limitation to the students. Hence it will be a big challenge to the institute to maintain the interest and involvement of students along with continuity in e-Learning system.

7) **Cyber Security:**

   This is another big challenge for the institutes to develop safe cyber space

for the delivery of e-Learning content to their students.

Opportunities for E-Learning:

1) **Effective Use of ICT:**

   If the ICT infrastructure is well developed by the institute, then, it can be effectively used not only for the delivery of learning content to the students, but it can also improve the learning experience of the students.

2) **E-Learning anywhere, anytime and to anyone:**

   Since the content is made available online, the limitations of traditional learning can be overcome here and the learning can be provided to anyone, who enrolls for the course, anywhere, anytime and to anyone.

3) **Substantial Cost Savings:**

   Though the initial cost of investment is high, but it will provide a substantial saving in the cost by reducing the cost of physical space, travel, salary etc.

4) **Timely Upgradation and Reach of Information:**

   Since the teachers can update, upgrade their teaching content and make them all available on the portal, timely upgradation and reach of information to

the learners is possible, unlike the traditional learning method.

5) **Personalized & Customized Learning:**

   Online/Distance/e-Learning can be also a better option to the working professionals, as per the requirement, the courses can be customized matching to the requirement of the learners.

6) **Improved Collaboration and Interactivity:**

   On a global platform many foreign universities are doing good, since the teacher need not to travel for delivery of his lecture, use of web conferencing technology, internet, and many other infrastructural support. Hence, it will be a good opportunity for the institutes to collaborate for technical as well for academic support.

7) **Convenience of OL/DL:**

   Since the learners can overcome the limitations of geographical boundaries, time, distance, it will be very convenient for the teacher as well as the learners to enroll and get course certified through online learning (OL) or distance learning (DL) at their convenient time, pace of learning and standard content delivery again and again.

Conclusion:

Based on the outcome of data analysis, the researchers like to conclude their research by mentioning that, the e-learning system is a more convenient and effective way of managing knowledge and educational needs of higher education institutions, however in present circumstances it also develops certain challenges for the institutes as well as for the students. Discussion on ways to improve these challenges requires rules in relation to both teachers and learners[11, 12, 13]. Now since e-Learning system is in the transition from traditional teaching-learning phase to internet based (e-Learning) teaching-learning phase, it is the time for consolidation to the institutes to develop e-content, learning of e-delivery methodology[14, 15, 16]. Teachers and learners will accept this shift from traditional classroom learning to e-learning approach. Creating a safe online space with better and advanced technology can cover the gap of this digital divide and by creating a synchronous learning environment will make the students to remain continued with the course, with pleasant learning experience[18, 19].

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