Horizons of Holistic Education **p ISSN : 2349-8811**
Vol-5, Issues 3 pp 46-64 **e ISSN : 2349-9133**

An Assessment of E-Learning Readiness of Academic Staff And Students of Higher Education Institutions in Gujarat, India

Dr.Y.Vijaya Lakshmi [1*] and Dr.Jaishree Das [2]

1. *Assistant Professor, Central University of Gujarat, Gandhinagar, Gujarat*
   (Corresponding author) Email: vijaya.lakshmi@cug.ac.in, jayayanduri@gmail.com*
2. *Associate Professor, Department of Education, Faculty of Education and Psychology, The Maharaja Sayajirao University of Baroda, Vadodara*

Revised: 21-05-2018 **Accepted: 11-06-2018**

Abstract

Gujarat state has many prestigious higher education institutions which are inclined towards using e-learning platform. In order to ensure that the stakeholders derive optimum benefit from this platform there is a serious need to conduct cross-sectional studies to assess their eLearning readiness. This study is an attempt in this direction.Data was collected (physical/e-form) through a self-developed questionnaire from the accessible sample of 83 faculties, 153 students and 12 lab administrators belonging to 35 colleges which are using the e-learning practices. Frequency, percentage and intensity index were used to analyze the data. The findings of the study reveal that, most of the stakeholders have positive opinion regarding the infrastructure available to adopt e-learning practices but feel that there is a need for improvement in the facilities. Majority of the stakeholders have a positive perception towards concept of e-learning and believe that e-learning has many benefits and they also felt that e-learning helps to a less extent in maintaining transparency, reduces face to face contact and interactivity. These factors may hinder their readiness towards e-learning. Also unreliable technology and lack of faculties' confidence and expertise to use this platform in teaching environment are seen as biggest barriers in e-learning. Hence, there is an immediate need to plan for training programmes which will help in improving the confidence of faculties in using this platform and would increase their e-learning readiness.

Keywords: *Higher Education, E-learning, Information and communication technology (ICT), e-learning readiness.*

Introduction

Indian higher education is one of the world's largest system. Despite significant progress over the last ten years, it still faces four broad challenges i.e.,the supply-demand gap; the low quality of teaching and learning; constraints on research capacity and innovation; uneven growth and access to opportunity. Educational technologies especially e-learning is proving to be a good solutionand of highest priority in addressing the quality issues in higher education. E-learning is an emerging virtual reality in the educational organizations and is opening new opportunities of transforming the educational process and the system. If well designed and managed, e-learning can overcome many barriers associated with traditional learning (Hijazi et.al, 2003). E-learning is a concept which encompasses students, faculty, and e-learning managers (Persico et.al, 2014). The challenges posed by e-learning are better understood and addressed when there is an understanding about its stakeholder's readiness towards it (Kaur&Abas, 2004). However, the increasing trend of adoption of e-learning in higher education institutions is raising questions like: What is the opinion of the students, faculties towards e-learning, its advantages, dis-advantages and challenges? How far is the faculty ready in terms of their skills to ensure that the powers of these growing technologies are harnessed?

The evaluation of e-readiness demands that it should be studied from two points: (a). the point of view of its various stakeholders (students, teachers, e-learning experts/lab administrators etc) (Agboola, 2006;Persico et al, 2014) (b). From point of view of various factors like technological, organizational, environmental, nature of course offered etc.(Kaur&Abas, 2004).From the perspective of stakeholders, most of the times faculties perceive e-learning to be positive and useful. However, they also had many issues which reduced their readiness towards e-learning. (Siphamandla et.al, 2014;FathimathThaufeega, 2016). On the other hand, majority of the students also perceived that e-learning is useful and effective (Fageeh, 2011). However, studies also showed that students satisfaction was less in e-learning platform than in traditional system or they were still not ready for e-learning (Keller &Cernerud, 2002; Kaur&Abas, 2004; FathimathThaufeega, 2016). Studies also suggested that institutions, policy makers and regulatory bodies have to play a more concrete role in enhancing the e-learning facilities and programmes (Kaur&Abas, 2004).

In India, a fair amount of literature on e-learning studies dealt with aspects like e-learning quality (Agariya& Singh, 2012), perceptions, readiness, attitude towards e-learning (Azimi, 2013). However, majority of these studies are focused to study the readiness or perceptions from a single point of view like that of teachers or students or administrators. Moreover, these studies confine to very micro level with single university or an institution (Azimi, 2013). Gujarathas 62 universities and 2093 colleges with 11,34,089 students enrolled in it every year and thus is witnessing a tremendous growth in higher education.Hence, there is a strong need for doing such study. The present study is undertaken to explore the e-learning readiness among faculties, students and lab administrators of higher education institutions of Gujarat with respect to various aspects like facilities or resources available for adopting e-learning, perception and abilities of stakeholders towards e-learning etc.

Theoretical Framework

E-learning readiness is the level of mental and physical preparedness or readiness of an organization towards various aspects of e-learning like technological skills, online learning style, equipment/infrastructure, attitude, human resources, financial etc (Parlakkiliç, Alaattin, 2015; Mutiaradevi.R,2009). The various critical success factors for e-learning identified by various researchers included aspects instructor; student; information technology; university support, financial, infrastructure, human resources, content, environment, psychological, social etc (Khan, 2012; Hasan, 2007; Tubaishat and Lansari, 2011)

Objectives

The following are the objectives of the present study:

- To study the infrastructure available in the institutions adopting e-learning practices in Gujarat.
- To study the opinion of faculties, students and lab administrators regarding the concept of e-learning, its benefits, dis-advantages and challenges.
- To study the abilities of faculties and laboratory administrators with respect to use of various e-learning tools.

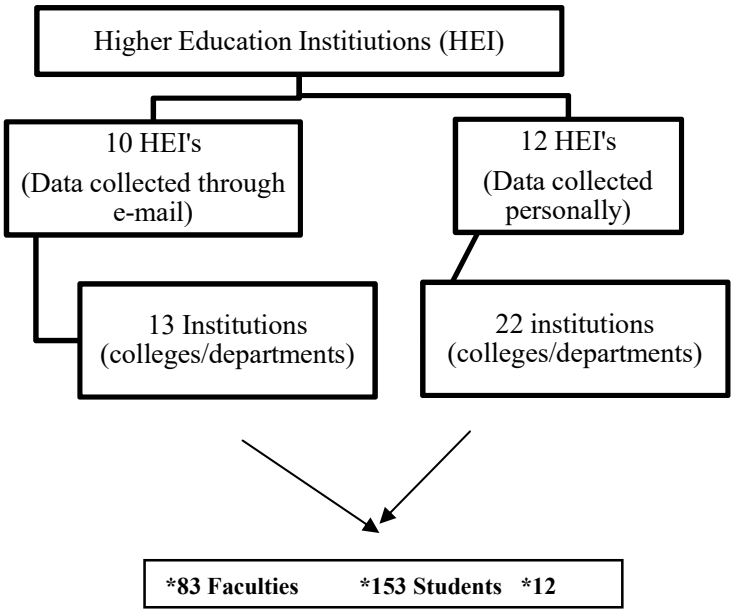
Research design and Methodology

Sample

The commissionerate of Higher Education, Government of Gujarat maintains the database of all higher education institutions in Gujarat. All those educational institutions which have their website were contacted through e-mail for the purpose of the study.

A mail clarifying them about the definition of e-learning was sent to them and they were asked if their institutions were adopting e-learning practices or not. 35 colleges responded positively that they were using e-learning practices. To respect the rights, values, and sentiments of the research participants, we informed them about the purpose of the study and confidentiality. The data collection was carried out with an assurance of maintaining the anonymity of participating institutions and its stakeholders. Out of these, 22 colleges which did not show acceptance to respond to the e-tool were personally visited to study their practices and collect the data. The faculties, students and lab administrators of remaining 13 colleges who showed positive response to fill the e-tool were sent the same. Thus, in all 83 faculties, 153 students and 12 lab administrators from various programmes like medicines, engineering, management, educationetc of 35 colleges participated in the study. Therefore, the sample for the present study is based on accessible population rather than on target population.

Figure 1: Participants in the study



Instrument

The study adopted across-sectional survey design involving a random sample of faculties, students and lab administrators. Data were gathered with the use of self madequestionnaire developed by the researcher after going through extensive literature and objectives of the study (Aydin and Tasci, 2005; A. K. Agboola, 2006;Mutiaradevi.R,2009; Khan, 2012; Hasan, 2007; Tubaishat and Lansari, 2011). Separate questionnaire for students, teachers and lab administrators was developed to collect data from them. After making the changes in the tool as per the suggestions given by the experts, the tool was used for data collection. To maximise the number of

participants, the questionnaires were made available both in e-form and hard copy. The tools developed contained a combination of items like Yes/No and rating scale items. Tools contained questions related to aspects like: computer and internet abilities of students, concept of e-learning, opinion regarding the e-learning practices being adopted at the institution, familiarity with e-learning technologies etc.

Data Analysis

Intensive care was taken to ensure that the participants respond to all the questions of the tool. The collected data was analyzed using percentages, frequencies, intensity index etc. Intensity index is the statistical technique used to measure the exact point of intensity preferred by the sample as a whole in a 3 to 7 point of preference against any statement or item. It indicates the exact preference, like, or dislike about a situation in a Likert type of scale. Intensity Index was calculated using the following formula for an item in a five point scale arranging from higher intensity to lower intensity i.e. (strongly agreed, agreed, undecided, disagreed, strongly disagreed).

Intensity Index (II)= ((f1*5)+ (f2*4)+ (f3*3)+ (f4*2)+ (f5*1))/(f1+f2+f3+f4+f5)

where f1,f2,f3,f4 and f5 are the frequency of respondents for strongly agreed, agreed, undecided, disagreed and strongly disagreed respectively.The analyzed data was then synthesized and presented.

Results and Discussion

Findings related to Facilities/Resources Available For Adopting E-Learning Practices

Connectivity and physicalcommunications infrastructure are the foundation of electronic-readiness for a country(Eze et al. (2013); Aydin&Tasci, 2005).From the findings it was observed that, many of the higher educational institutions have Wi-Fi connectivity in their campus and hence in such institutions the concept of physical computer lab did not exist. However, the institutions which did not have Wi-Fi connectivity in the campus had a minimum 2 computer labs and in some institutions they even have 4 or more computer labs. Almost all the higher educational institutions have more than one computer lab and in many of these institutions, the ratio of computers to students in all the institutions is around 1:2.Further, in 80% of the computer labs of the institutions, all the systems have internet connection.In most of the institutions, the CMS/LMS/CLMS

(Campus Management System/Learning Management System/Content Learning Management System) has facilities related to attendance, results of students, students assignments etc. The system also has important downloads of programmes and software's which are useful to the faculty and students. CMS of a few institutions also provide access to the digital libraries of their institutions. Institutions use software and applications like Acado, google docs etc. to download and upload assignments.

With regard to the infrastructure/resources available with the institutions for adopting e-learning practices:

Faculties

It is found that as high as 73% of faculties responded that they have individual personal computers for them in their staff rooms. Among them, 90% of participants responded that their personal computers are connected to internet.

Lab administrators:

Around 63.64% lab administrators claim that their institutions have software specialists for the purpose of adopting e-learning practices, and around 54.55% of lab administrators claim that they have the authoring tools which are required for the purpose of adopting e-learning practices. 100% of the lab administrators claim that their institutions have high bandwidth connectivity and much secured network connectivity. 90% of the lab administrators claim that they have free and unlimited internet access. With respect to connectivity with digital libraries, around 72.73% of the lab administrators claim that their network has connectivity with the digital libraries of their institutions and also other pay and use digital libraries. A higher percentage of lab administrator's i.e. around 72.73% of them said that latest software were available with them. However, only 36.36% of lab administrators expressed that they used LMS (Learning Management System) for providing e-learning practices.

Studies by Mutiaradevi. R, 2009,SiphamandlaNcube, et.al, 2014,Parlakkiliç, Alaattin, 2015support the point that facilities/resources available for adopting e-learning practices play an important role in determining the e-learning readiness. The results obtained in this study also highlight the point that there is a need to improve the facilities/resources available for adopting e-learning in higher education institutions of Gujarat.

Findings related to Perception regarding E-Learning

Studies reported that individual readiness and positive perception about e-learning significantly improve the effective use of e-learning(Aydin&Tasci, 2005; Sadik, 2007). In our survey, the respondents were asked their perception about e-learning. From the findings, it was found that

Faculties:

as high as, 71.08% of the faculties felt that e-learning is a valuable practice and around 24.1% of the faculties felt that e-learning is very valuable. 83.13% of the faculties felt that gender was not significant for responding to e-learning (Aydin and Tasci, 2005; Parlakkiliç, Alaattin, 2015). However, this is in contradiction to study carried out by Agboola(2006), Proctor& Burnett (2006) where the investigators reported that gender was significant for the perceptions of e-learningconfidence. Moreover, 50.6% of the faculties expressed that academically well prepared students responded more positively to e-learning practices than academically less prepared students.

Lab Administrators:

Around 58.3% of lab administrators felt that e-learning is a very valuable practice. This shows that faculties and lab administrators believe positively in the value of e-learning which is a good sign for higher education institutions in moving towards e-learning platform. Findings deduced by Akaslan, D., & Law, E. (2011),Aydin&Tasci, 2005; Sadik, 2007 indicate that attitude directly affects individuals readiness for e-learning.

From the above results, it is clear that faculties and lab administrators believe positively in value of e-learning and also feel that gender does not appear to moderate the students response towards e-learning. This is a good sign for the institutions which are using the e-learning practices and also for the institutions which are planning to use e-learning practices in the near future.

Findings related to Benefits of E-learning

Positive culture is created in the institute if all the stakeholders realize the benefits of e-learning (Sadik, 2007). The questions related to benefits of e-learning were asked to determine whether participants understood and appreciated the benefits of e-learning. Lack of this may have a bearing upon the uptake of e-learning.

Faculties:

As shown in table1, the intensity index obtained for the statements regarding the personal benefits of e-learning as perceived by faculties'ranged from 2.26 to 3.23. From

the obtained intensity indices it is clear that, most of the faculties felt that spreading of information related to the content becomes easy and faster in the e-learning platform. Faculties also felt that with the help of e-learning platform it becomes easy to update the student's records and e-learning helps the students to learn at their own pace at any time and in any place. Re-use of the content is also seen as one of the benefits of e-learning. In terms of professional benefits of e-learning, faculties responded that the highest advantage of e-learning is that they can reach more students in less time. According to them, in e-learning platform, it is easy to provide additional information regarding the course to the students.

Table 1: Percentage Wise Distribution of Ranking for the Personal and Professional Benefits of E-Learning as Marked by **Faculties** along with Intensity Index (II)

Personal Benefits					
Particulars	**1st**	**2nd**	**3rd**	**4th**	**II**
Spreading of information related to the content becomes easy and faster.	47.14	34.2	12.86	5.71	3.23
Students can learn at any place, pace, and any time	34.25	17.8	24.66	23.2	2.63
Re-use of content	17.57	21.6	29.73	31.0	2.26
Easy to update the students records	35.62	21.9	21.92	20.5	2.84
Assist in maintaining transparency	19.12	19.1	30.88	30.8	2.26
Personal Benefits					
Particulars	**1st**	**2nd**	**3rd**	**4th**	**II**
Re-use of content	26.39	26.3	20.83	26.3	2.38
Easy to provide additional information regarding the course	29.85	40.3	19.40	10.4	2.90
Can reach more students in less time	52.70	25.6	10.81	10.8	3.20

These findings confirms the assertion made by various researchers that e-learning is not limited by time, space and location and many other benefits (Smedley, 2010;, SiphamandlaNcube, et.al, 2014; Unneberg, 2007).However, most of the faculties felt that the least benefit of e-learning is its ability to maintain transparency. During the process of data collection the investigator could observe that some faculties were using e-learning platform to its optimum extent both in teaching-learning and also in administrative works like sending notice/information to the students on various issues like availability of new content, notices related to hostels, examinations, assignments, providing additional literature etc.

Lab administrators

Table 2 shows the benefits of e-learning as expressed by lab administrators. Just like faculties, even the lab administrators felt

that spreading of information becomes easy and faster in the e-learning platform and enabling of learning at any place, pace and at any time is another best benefit of e-learning. The benefit which is ranked 3rd by lab administrators is that they felt that e-learning helps in development of professional skills and thus it enables them to be up to date with professional needs. These findings are in line with the studies by Wagner et.al, 2008, Smedley, 2010whodeduced that ease of communication, flexibility of time, place and pace are the most important benefits of e-learning.

Table 2: PercentageWiseDistribution of Ranking for the Benefits of E-Learning as Expressed by **Lab Administrators** along with Intensity Index (II)

Particulars	1st	2nd	3rd	4th	II
Spreading information becomes easy and faster	66.67	16.66	16.67	0	2.50
Helps in being upto date with professional needs	33.33	22.22	44.44	0	1.89
Assists in development of professional skills	33.33	44.44	22.22	0	2.11
Enables learning at any place, pace and any time	33.33	50.00	16.67	0	2.17

Students

When it comes to student's perception regarding the benefits of e-learning, table 3 shows the findings.In terms of benefits of e-learning, students felt that the most important benefit of e-learning is that it enables learning at any time and at their own pace(Zhang et.al, 2006; Smedley, 2010).

Table 3: Percentage Wise Distributions of Ranking for the Benefits of E-Learning as Ranked by Students along with Intensity Index (II)

Particulars	1st	2nd	3rd	4th	5th	II
Ease of access of information related to the course	27.21	17.6	21.3	28.7	5.15	3.33
Students can learn at their own pace	22.56	20.3	35.3	15	6.77	3.37
Enables learning at any time	25.55	38	24.1	10.2	2.19	3.74
Enables learning at any place	22.6	15.1	12.3	26.7	23.3	2.87
Assist in maintaining transparency	8.462	6.92	9.23	18.5	56.9	1.92

However, Keller &Cernerud, 2002 reported that the studentsdid not regard access to e-learning as a benefit as compared to personal interaction. Many other studies reported that students preferred hybrid learning to complete online learning (Eldeeb, 2014).In some places where face-to-face mode was not available or it was not according to their convenience, students

opted for e-learning only (Huss and Eastep, 2013).

Moreover, just like faculty, students also gave last rank to the option of "assist in maintaining transparency". This shows that just like faculties, even students feel that ability of e-learning in maintaining transparency is less. Thus, faculties, lab administrators and students all felt that access to information related to the course content becomes easy and fast in the e-learning platform and further it is easy to reach more students in less time. Also, they all almost equally felt that e-learning platform provides the scope for learning at own pace, at any time. On the part of the faculties, they felt that providing additional information regarding the course becomes easy in e-learning platform and it also becomes easy for them to reuse the content.

Findings related to Dis-advantages of e-learning

Along with the benefits of e-learning, the participants were also asked to rate the dis-advantages of e-learning.

Faculties:

The intensity index for dis-advantages of e-learning as expressed by the faculties ranges from 2.55 to 3.77 (table 4).The interpretation of the results shows that most of the faculties perceived that e-learning is not a costly affair (Abu-Hassan-Assari, 2005) which is in contradiction to the study byAkkoyuklu&Soylu, 2006.

Table 4: PercentageWiseDistribution of the Ranking for the Dis-Advantages of E-Learning as Ranked by Faculty along with Intensity Index (II)

Particulars	1st	2nd	3rd	4th	5th	II
It is a costlyaffair	21.	15.0	12.	16.	34.2	2.5
Handling and managemen t of content is a technicalaff air	10.	24.3	24.	28.	12.1	2.9
It reduces face to face contact and interactivity	40.	22.6	18.	12.	6.67	3.7
As the content is available online for a long time, it reduces students interest	16.	31.5	17.	20.	13.7	3.1
In e-mode, it is difficult totrace the students' actual learning.	26.	20.2	27.	14.	11.5	3.3

The biggest disadvantage as perceived by faculties with respect to the e-learning platform was that it reduces face to face contact and interactivity(Young, 1997). Faculties also felt that in e-mode, it is difficult to trace the student's actual learning and that is why they rated least for the transparency aspect of e-

learning(Arkorful&Abaidoo, 2014). Further, as the content is available online for a long time, they also felt that it reduces student's interest in the content. Also some faculties felt that handling and management of content in the e-learning platform is a technical affair and hence it is seen as one of the disadvantages.

Lab Administrators:

Most of the lab administrators felt that as the content is available online for a long time, it reduced the students interest with respect to that content.They also expressed that e-learning reduces face to face contact and interactivity.The two aspects of e-learning, i.e., 'it increases their workload' and also 'effective\real learning does not happen' were rated as the least dis-advantages of e-learning.

Students

Students also felt that e-learning reduces face to face contact and interactivity similar to faculties and lab administrators and hence it is the biggest disadvantage of e-learning. The students also expressed that it is difficult to trace the students' actual learning in the e-mode (table 5).

Table 5: PercentageWiseDistribution of the Ranking for the Dis-Advantages of E-Learning as Ranked by Students along with Intensity Index (II)

Particulars	1st	2nd	3rd	4th	II
E-learning reduces face to face contact and interactivity	31.75	31.75	14.29	22.22	2.73
As the study modules are available online for a long time, E-learning reduces students interest towards the modules	28.80	16.00	28.80	26.40	2.47
In e-mode, it is difficult to trace the students' actual learning.	21.77	27.42	33.06	17.74	2.53
Often, effective\real learning does not happen	23.02	24.60	23.81	28.57	2.42

All the three stakeholders felt that e-learning mode reduces face to face interactivity and it is actually very difficult to trace the actual performance of the students. They also said that as the e-learning modules were available for a longer time, it reduced students' interest towards these modules as they develop the tendency of postponing their tasks. Further, a few faculties felt that handling and management of content in e-learning mode is a technical affair and thus it is also considered as one of the dis-advantage of e-learning. However, the positive sign came from lab administrators who felt that adopting e-learning practices does not increase the work pressure.

Findings related to Challenges/Barriers to e-learning

Faculties

The intensity indices obtained for statements which described the challenges/barriers to e-learning varied from 3.15 to 4.06 (table 6). According to faculty, "Lack of knowledge on how to use the e-content on the part of students" is perceived to be the least causing barrier in promoting e-learning practices. This shows a positive sign that most of the students have sufficient knowledge to use the e-learning practices. Further, faculties also expressed that adopting e-learning practices would not increase their work load (Lloyd et.al, 2012).

Table 6: PercentageWiseDistribution of the Ranking Given by Faculty for theChallenges/Barriers to E-Learning along with Intensity Index (II)

Particulars	1st	2nd	3rd	4th	5th	6th	II
Students lack knowledge about how to use the e-content	1	1	1	2	1	2	3
Network access/ Usage problems (unreliable technology)	2	1	2	9.	1	5	4
Students lack self motivation in using e-content	2	1	1	1	9.	1	3
Faculties lack interest and confidence to use this technology in teaching environment	3	1	1	8.	1	1	4
Increasing work load on the part of faculties	1	2	2	1	1	1	3

However, unreliable technology and lack of interest and confidence on the part of faculties to use the e-learning practices were found to be biggest challenge by faculties in adopting e-learning

Practices (Agboola, 2006; Mutiaradevi, R, 2009; Parlakkiliç, Alaattin, 2015).Hence, proper measures need to be taken at institutional level to resolve the network access/usage problems. Also immediate measures should be taken by the administration of the institutions to boost up the faculties interest and confidence in adopting the e-learning platform. However, faculties also felt that students lack self-motivation in using the e-content, hence measures should be taken to identify the causes and solve this problem.

Lab administrators

According to lab administrators, lack of sufficient infrastructure to promote e-learning and the technical nature of handling and managing the content in e-learning platform, lack of pre-trainingwere considered to be the biggest barriers in implementing the e-learning platform.

Unreliable technology was considered to be the least barrier in adopting e-learning which is in contrast to the opinion expressed by faculties. The findings in this section reveal that management should take some serious measures to increase the technical consistency of the e-learning platform. The findings of the study strongly support the fact that there is a need for organizing proper trainings to the faculties with regard to e-learning platform.

Findings related to Familiarity with e-learning tools

When an institution decides to adopt e-learning, the stakeholders involved are required to demonstrate some experience on the e-learning design and delivery and they need to be familiar with tasks like development of instructional system, use of software and hardware etc which is necessary in order to lead the whole process through the stage of analysis, design, implementation, and evaluation (Driscoll, 2002).

Stuents

In terms of working with computers, as high as 69% of the students said that they were very comfortable in working with the computers. More than 45% of the students work for more than 20 hours in a week on computers and around 19% of them work between 20 and 10 hours in a week on computers. Around 35% of the students use computers between 1 to 9 hours in a week. This shows that most of the students in higher education institutions were comfortable in using computers. In terms of using the internet, a majority of students consider themselves as experienced users. Around 23% of students consider themselves as very experienced users and around 9% of the students consider themselves as champions in using internet(FathimathThaufeega, 2016). Most of the students have medium and advanced expertise in using a computer and internet.This is a very good sign for the higher educational institutions which are using e-learning practices. Most of the students logon to the institutions website or intranet more than once a day. However, the major barrier as seen in earlier sections is inferior quality of the practices that are adopted in the institutions.

Faculties

When it comes to the use of e-learning tools by faculties and lab administrators, the intensityindex obtained for faculties with respect to LearningSoftware/Virtual Tutorials, Computer Based Assessment,

Virtual Learning Environment (Eg. WebCT, Blackboard), Video conferencing, Authoring web pages(for specific learning outcomes), Electronic White Boards were 2.51, 2.4, 2.01, 1.98, 1.96, 1.94 respectively. These figuresshow that, only with reference to learning software/virtual tutorials faculties claimed that they were familiar with it. With reference to all other e-learning tools, faculties claimed that they have tried them once. A meager percentage of faculties i.e., 9.64%, 8.43%, 3.61%, 6.02% fell under the category of expert users with reference to e-learning tools like Virtual Learning Environment (Eg. WebCT, Blackboard...), Video conferencing, Authoring web pages(for specific learning outcomes), Electronic White Boards. The intensityindexfor each of these tool revel that most of the faculties have tried these tools once or have not used them at all. A very meager percentage of faculties claimed that they were expert users with referenceto their familiarity with the mentioned e-learning tools. This finding is in tune with the studies of Edumadze (2014), Rogers (2000), Alenezi (2012).

Lab administrators

This scenario is observed to be better with lab administrators. One of the reasons for the above scenario could be that most of the higher education institutions were using only basic e-learning facilities and hence might be the faculty did not get any opportunity to use these tools, or it could be that faculties did not have proper expertise to explore and use these tools. The other reason could also be that in most of the institutions managing the e-learning platform is considered as a technical task and hence it is mostly handled by lab administrators. If the higher education institutions want to reap maximum benefits from the e-learning practices that they are adopting, they should create a platform where their faculties are exposed to latest e-learning tools and not only exposing them but it should also be mandatory for the faculties to use these facilities. Further, the institutions should now start focusing both on the technical and pedagogical aspects of e-learning.

Limitations

This study is limited to only state of Gujarat and the study involved only those higher education institutions which were listed on the Commissionarate of Higher Education, Government of Gujarat website. The study is also limited only to those institutions which responded that they were adopting e-learning practices. As less number of institutions responded that they are adopting

e-learning practices, this may threaten the representativeness of the sample, but the sample appears homogenous with the available accessible population. The access or limitations of resources available in these institutions could have also influenced the perceptions of participants regarding various aspects like benefits, dis-advantages and barriers of e-learning. Despite these limitations, the findings from this study are compatible with the current literature. Further, in spite of many efforts, researcher could not get any response from the institutions which are using fully online mode of e-learning. Hence, the study includes only those institutions which are using the blended mode of e-learning. A novel feature of this study isthat it addresses several important constructs not previously assessed in the state of Gujarat. In addition, the points raised here speak about the need for further, expanded studies exploring not just the physical aspects of e-learning but also focusing on the pedagogical dimensions.

Directions for future study

Even though the institutions claim that they use the e-learning platform, it can be noted that still they are in the infancy stage. Hence, there is a need to carry out deeper studies to evaluate the objectives/mission/goal of the institutions in adopting the e-learning practices. Studies focusing on the pedagogical aspects of e-learning and other qualitative aspects of the forms of e-learning being offered in the educational institutions should be carried out. The number of institutions in India adopting fully online mode of e-learning are increasing and hence research studies in this direction can also be carried out. Also, now a days, many institutions are offering the same course in face to face mode and in fully online mode. Hence, comparative research studies to study the performance of students in traditional form of teaching-learning and fully online mode of e-learning can also be carried out.

Conclusions

The present study is set out to determine the scenario of infrastructure available in the institutions adopting e-learning practices in Gujarat and also to study the opinion of stakeholders (faculties, students and lab administrators) regarding the concept of e-learning, its benefits, dis-advantages and challenges. An attempt is also made in the study to know the abilities of faculties and laboratory administrators with respect to use of various e-learning tools. The stakeholders

seem to appreciate about the infrastructure available to them in terms of computers and internet facilities but felt that it needs to be improved further. Overall, the stakeholders believe positively in the value of e-learningand feel that spreading of information related to the content becomes easy and faster in the e-learning platform and the platform helps to reach more students in less time and in e-learning platform students get the chance to learn at any time and in their own pace. Re-use of the content was also seen as one of the biggest benefits of e-learning. However, the stakeholders have apprehensions that e-learning mode reduces face to face interactivity and it is very difficult to trace the actual performance of the students. They also felt that availability of e-learning modules online for a longer time reduces student's interest as they develop the tendency of postponing the work. Also, the quality of the content that is posted in the e-platform was a big matter of concern for the students. Most of the faculties were interested in learning more about this platform. A point of concern is about the abilities/expertise of faculties in using various e-learning tools. This again puts forward the point that institutions have just begun this initiative of using e-learning practices and have made least efforts in training the faculties in these e-learning tools. Hence, there is an immediate need in higher education institutions to take such measure which would develop the culture of using the e-learning practices in the institutions and also the government especially department of higher education should develop e-learning quality guidelines and should make it mandatory for all higher education institutions to follow these guidelines. For this purpose, government can take the help of higher education institutions that are already using e-learning practices effectively.

These findings are envisioned to present government, education stakeholders and educational institutions better understanding of the e-learning readiness before rolling the e-learning system to other institutions of higher learning. Therefore, the study will ignite the process of the formulation of national policies and strategies to enhance and support e-learning initiatives to counter and address the existing and future e-learning challenges given the foreseen potential of e-learning in higher education. The study will contribute to research literature especially

with reference to Gujarat where no such study was conducted till date.

References

Abu-Hassan-Assari, MH. (2005). *Adult learners and e-learning readiness: a case study*. A paper presented at the European College Teaching & Learning Conference, 13–17 June.

Agboola, A.K. (2006). Assessing the awareness and perceptions of academic staffs in using e-learning toold for instructional delivery in a postsecondary institution: a case study.*The Public Sector Innovation Journal*, 11(3).

Agariya, Arun Kumar and Singh, Deepali. (2012). e-Learning quality: Scale development and validation in Indian context, Knowledge Management& E-Learning.*An International Journal, 4(4).*

Akaslan, D., & Law, E. (2011). Measuring Teachers' Readiness for ELearning in Higher Education Institutions Associated with The Subject of Electricity in Turkey. Paper presented at the Global Engineering Education Conference (EDUCON),IEEE.

Akkoyuklu, B. &Soylu, M. Y. (2006). A study on students' views on blended learning environment.*Turkish Online Journal of Distance Education*, 7(3).

Alenezi, A. M. (2012). *Faculty members' perception of e-learning in higher education in the Kingdom of Saudi Arabia (KSA)*.Texas Tech University.

Arkorful, Valentina&Abaidoo, Nelly. (2014). The role of e-learning, the advantages and disadvantages of its adoption in Higher Education. *International Journal of Education and Research*,2(12). Retrived from: http://www.ijern.com/journal/2014/December-2014/34.pdf

Aydin, CH. &Tasci, D. (2005).Measuring readiness for e-learning: reflections from an emerging country.*Educational Technology & Society*, 8(4):244–257.

Azimi, H.M. (2013). Readiness for Implementation of E-Learning in Colleges of Education, *Journal of Novel Applied Sciences*, 2 (12).

Driscoll M. 2002. *Web-based training: Creating e-learning experiences*. San Francisco, CA: Jossey-Bass/Pfeiffer.

Edumadze, John Kwame Euafo et.al. (2014). Evaluating the Awareness and Perceptions of Lecturers in using E-Learning Tools for Teaching in University of Cape Coast, *International Journal of Computing Academic Research*. 3(1)

Eldeeb, Rasha A. (2014). Students' Perceptions to e-learning.*IOSR Journal of Research & Method in Education*,4(3).Retrieved from: http://www.iosrjournals.org/iosr-jrme/papers/Vol-4%20Issue-3/Version-4/G04343336.pdf

Eze, S. C., Awa, H. O., Okoye, J. C., Emecheta, B. C., &Anazodo, R. O. (2013). Determinant factors of information communication technology (ICT) adoption by government owned universities in Nigeria–A qualitative approach. *Journal of Enterprise Information Management*, 26, 427–443.

Fageeh, A.I. (2011). EFL students' readiness for e-learning: factors influencing e-learners acceptance of the Blackboard in a Saudi university, *Jalt Call Journal*, 7(1).

Hassan M. Selim. (2005). Critical success factors for e-learning acceptance:

Confirrmatoryfactormodels.*Computers & Education* 49.doi:10.1016/j.compedu.2005.09.004

Hijazi, S., Prosper, B., Plaisent, M. &Maguiraga, L. (2003) Interactive Technology Impact on Quality Distance Education.*Electronic Journal of E-learning*, 1(1), 35-44.http://www.ejel.org/volume-1-issue-1/issue1-art5-hajazi.pdf

Huss, John A. and Eastep, Shannon. (2013). The Perceptions of Students toward Online Learning at a Midwestern University: What are Students Telling Us and What Are We Doing About It?*Inquiry in education*,4(2). Retrieved from:http://digitalcommons.nl.edu/ie/vol4/iss2/5

Kaur, K., &Abas, Z. (2004).An assessment of eLearning readiness at Open University Malaysia. Retrieved from http://eprints.oum.edu.my/115/1/an_assessment.pdf

Keller, Christina and Lars Cernerud. (2002). Students' Perceptions of E-learning in University Education. *Journal of Educational Media*, Vol. 27, Nos. 1-2. Retrieved from: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.452.712&rep=rep1&type=pdf

Khan, B. H. (Ed.). (2012). *User interface design for virtual environments: Challenges andadvances*. Hershey, PA: IGI Global.

Lloyd, Steven A, Michelle M. Byrne, Tami S. McCoy (2012). Faculty Perceived Barriers of Online Education. *MERLOT Journal of Online Learning and Teaching*, 8(1). Retrieved from: http://jolt.merlot.org/vol8no1/lloyd_0312.pdf

Mutiaradevi, Retisa. (2009). *Measuring E-Learning Readiness in the Forestry Research and Development Agency of Indonesia*. Victoria University of Wellington.

Parlakkiliç, Alaattin. (2015). E-Learning Readiness in Medicine: Turkish Family Medicine (FM) Physicians Case.*Turkish Online Journal of Educational Technology*,4(2).

Persico, D., Manca, S., &Pozzi, F. (2014).Adapting the technology acceptance model to evaluate the innovative potential of e-learning systems.*Computers in Human Behavior*, 30, 614–622.

Proctor and Burnett. (2006). ICT integration and teachers' confidence in using ICT for teaching and learning in Queensland state schools. *Australasian Journal of Educational Technology*. 22(4), 511-530.

Rogers, P. (2000). Barriers to adopting emerging technologies in education.*Journal of Educational Computing Research*, 22.

Sadik, A. (2007). The readiness of faculty members to develop and implement ELearning: The case of an Egyptian university. *International Journal of ELearning*, 6(3), 433-453.

SiphamandlaNcube, LuyandaDube, Patrick Ngulube. (2014). E-Learning Readiness among Academic Staff in the Department of Information Science at the University of South Africa.*Mediterranean Journal of Social Sciences*,5.

Thaufeega, Fathimath. (2016). Institutional and Learner Readiness for eLearning in the Maldives, A thesis submitted for the degree of Doctor of Philosophy, College of Business, Arts and Social Science, Brunel University London.

Tubaishat, A., &Lansari, A. (2011). Are students ready to adopt e-learning? A preliminarye-readiness study of a university in the Gulf region.*International Journal ofInformation and Communication Technology Research*, 5(1), 210–215.

Unneberg, L. (2007). Grand designs for e-learning – can e-learning make the grade for our biggest corporates? *Industrial and Commercial Training*, 39(4).

Wagner, N., Hassanein, K. & Head, M. (2008). Who is responsible for E-learning in HigherEducation? A Stakeholders' Analysis.*Educational Technology & Society*, 11 (3), 26-36.

Young, J. R. (1997). Rethinking the Role of the Professor in an Age of High-Tech Tools. *The Chronicle of Higher Education*, 44 (6).

Zhang, D., Zhou, L., BrIggs, R. &Nunamaker, J. (2006). Instructional video in e-learning: Assessing the impact of interactive video on learning effectiveness. *Information & Management*, 43 (1), 15-27.