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CHAPTER V
SUMMARY AND CONCLUSION

5.1.0 INTRODUCTION

In the era of knowledge explosion, the methods of imparting the knowledge are also experiencing a tremendous change. According to Chandogya Upanishad, for passing of the knowledge, the king said to the Brahman that I posses this knowledge and wish to pass this knowledge to you. This knowledge you should further pass on to a large number of students. For this, the king said, he would provide financial assistance and support him. Thus the journey of passing on the accumulated knowledge through teacher (Guru) started and has traveled millions of distance. The system of education has also seen tremendous changes in various dimensions i.e., social dimension, psychological dimension, physical dimension, technological dimension etc. Education is now turning into a partnership business between state, market and community. There are also sweeping changes in technology. The reaching of the unreached is becoming a reality with the revolution of technological advancements. The role of the teachers has changed from transmitter of knowledge to facilitator of learning. The globalization of education is adding fuel to this. All these sweeping dimensions of changes are demanding for the fast and massive changes in the content and also process of education. Hence, there is a need for designing of suitable technologies to facilitate the learning as per the demands of the society. The myths that the technology is only for elite class and education is only for a fixed period of time in the life are vanishing at a faster rate. This has also brought a major shift in the meaning and concept of literacy. Literacy is no more an on-off situation. Everyone will have to reliterate oneself every now and then. Learning to learn is the key to literacy. The days are changing in such a way that computer literacy along with the literacy of conventional form is becoming must for everyone. Yet, another technological development that has changed the system of education and partly supplementing or even substituting to some extent is internet. It has brought paradigm shift in the learning system which can be referred to as multi-channel learning for it alone is capable of carrying text, data, still and moving images, sounds etc. With the provision of interactive media through chat sessions, news groups, social-networking, e-mails etc, internet is proving to be the fastest and cheapest communication. Thus,
internet is more or less becoming the order of the day. The other inventions and innovations in the field of information and communication technologies are also trying their level best to show their power in the field of education. The cell phone revolution is already helping the knowledge flow from all directions where the learner has to choose from knowledge cafeteria. Thus, all these changes are also making the open and distance education to appear on the scene as an alternative to formal face to face learning and thus trying to break the boundaries between formal and distance education. Many virtual universities are already on their way to establishment and are running parallel with formal universities. On one hand, it is seen that conventional education is not able to do its best to address the need for education to prepare citizens of an information society and on the other hand, rapid advances in communication technologies are bringing powerful information technologies based on the merger of computers, telecommunication and broadcast video technology. This scenario has lead to the development of various technologies that include artificial intelligence, virtual reality, internet, e-learning, m-learning etc. Thus, we are today in the transition of becoming information societies and a new kind of education system needs to prepare people for the future environment and not the past.

5.2.0 RATIONALE

We all agree that education is a powerful gateway to human development. It is hence, very essential to observe the changes happening in the field of education with reference to larger socio-economic and technological contexts. In this newly emerging electronic learning era and knowledge network, what are the new dimensions of education? How is the role of books, teachers, teaching-learning materials, mode of communication with the students, community participation etc. changing? Moving further, with the introduction of CBCS (Choice Based Credit System) in universities of Gujarat the days have already come where we have to prepare the recipes for the cafeteria and deck them up, and advise the students about the taste and significance of each recipe. How should the educational organization respond to these changes? What should the higher education institutions learn from all these? In many parts of the world the conventional campus is either giving its way to virtual campus or is adopting the features of virtual campus where teachers load their lessons on internet or other forms of computer networks, students download the lessons and interact with
teachers through chat sessions at a predetermined time across the globe. To respond to all this, universities are adopting multi approach of offering same course through face to face mode, conventional distance education mode and e-learning mode. The concept of e-learning will allow students to access the courses to the best of choice, with flexibility of time, pace and space and it also gives an opportunity to interact with the best in the world. Thus, e-learning is the latest mode of approach that is being used in the educational institutions. However, the million dollar question is, can these technological changes provide solutions to many problems being faced in the higher education system? We all agree that technology, alone does not teach. It enables the delivery of teaching and shifts the responsibility of learning from teacher to learner. The concept of e-learning is an emerging virtual reality in the educational organizations and is posing a new challenge of transforming not only the institutional programmes and functions but the very ethos of the educational process and the system. Hence, there is a strong need to deliberate on this. As more and more institutions are facing the need to move towards virtualization, what and where would be the real changes happening in terms of staff, students, office procedures, curriculum, methods of teaching, curriculum transaction etc? Will technology management become equally important as office management, finance management, student and staff management etc. in every educational institution? As communication plays an important role in education, to what extent will these new modes of communication techniques help us to address the problems of classroom? The researcher would here like to mention the quotes mentioned by Tiffin and Rajasingham “Like the home and work educational environments, the classrooms might need to permit broadband, fully meshed, fully interactive communication that can be multimedia and address all sensory channels.” (Tiffin and Rajasingham, 1995). Can the use of electronic learning system itself improve the quality of learning? How far is the faculty ready in terms of their skills to ensure that the power of these growing technologies are harnessed? Further, from our books, our education is migrating onto internet, leading to an increasing proliferation of internet-based virtual components into the traditional teaching-learning system. In an attempt to participate in the educational revolution, many institutions are tending to transform their classroom conventions of pre-established body of knowledge and practices on to the information super highways. They are attracted by commercial interest inherent in the globalization of education, technology push, rather than pedagogical rationale. While
powerful clusters of technology are increasingly available, the research feels that it is highly required for researching the experiences of the institutions in migrating onto the virtual experiences in the form of e-learning and study their scenario. The internet, multimedia, and virtual realities are seductive and hence it is very essential to examine its potential in terms of learning and various other dimensions.

According to Sherman and Judkins (1992), "most technologies at their outset are considered neutral. It is we people, who determine how, where and for what they are used. And as the world grows more sophisticated and its parts increasingly interrelated, so these decisions get more different and more important. Virtual reality is the most recent of links in this long chain, and like these other fundamental changes radio and TV included—it will offer us visions of hell as well as the more widely promised glimpses of heaven." Hence, for the implementation of any new technology, it is essential that there need to be paradigm shift with respect to various institutional level practices like—at management level, it need to create the vision and develop the strategic steps in order to achieve that vision, at pedagogical level, appropriate curricula and methodology need to be developed, teacher training and technical support systems are to be put into place so that teachers effectively integrate technology seamlessly into the curricula. With our higher education systems changing fast to adopt multi-channel learning and take the full potential advantage of information and communication technologies, researcher felt that there is a need to study about the scenario of practices being adopted in the higher educational institutions that are using e-learning practices in various aspects of its system. Hence, the researcher in an attempt to find answer to the many questions being raised in the mind, made an attempt to carry out the present study.

Whether one accepts or not, time has come for the education system and specially higher education to open their systems to take the advantage of these new technological revolutions. However, this is not a simple task as it requires large investments in hardware, software, training and content development. Hence, before claiming that higher education institutions must take up initiatives in this costly direction, it is very necessary to study about the institutions that are presently adopting such practices.
On the other side, realizing that e-learning would facilitate life long learning and sustain knowledge capabilities of the citizens of the country, the NKC (National Knowledge Commission) recommend establishment of a statutory body i.e., Indian Council of On-line Learning which also highlights the increasing importance of e-learning. Not only this, seeing the changing faces of virtual education in India, the University Grants Commission (UGC) (According to Press Trust of India Report on 24/12/2006, in order to meet the demand of higher education, UGC is planning to start virtual university and also offer on-line examinations) and the All India Council for Technical Education (AICTE) are also keen in promoting virtual campus. All these emerging trends in higher education in the area of e-learning have motivated the researcher to take up the study in this direction. Further, to utilize e-learning to its full potential, it is paramount that the results garnered by all the players in the field of e-learning should be explored and also they need to be shared. This will provide a view from a new dimension covering not only the achievements but also the gaps prevalent in the implementation of e-learning. The need of hour is to craft a platform for interchange of ideas and experiences so that a new perspective on e-learning concepts, implementations and technologies can be gained, leading to full utilization of e-learning's potentials. Hence, the investigator felt that the study would act like a platform to explore and share the ideas and experiences of higher education institutions that are using e-learning practices. Further, various initiatives being taken by the government of Gujarat (like developing a policy on ICT in school education, introduction of CBCS in universities, establishment of digital education and learning laboratories in colleges, proposal of department of higher education to set up 180 computer laboratories each having 100 computers and internet connectivity etc.) and other higher education institutions of Gujarat in direction of using information and communication technology has also motivated the researcher for the study.

5.3.0 RESEARCH QUESTIONS

In this newly emerging electronic learning system and knowledge network, what are the new dimensions of education? How are the roles of books, teachers, teaching-learning materials, mode of communication with the students etc. changing? How are our educational institutions responding to such changes? Such and many more questions aroused in the mind of the researcher and they are as follows:
• How comfortable are the students of higher education institutions of Gujarat in using the computers and internet?
• Does the staff in higher education institutions have proper computer and internet facility in their institution?
• What is the status of computer lab in the higher education institutions of Gujarat which are adopting e-learning practices?
• What forms of e-learning are available in the higher education institutions that are adopting e-learning practices?
• What are the various e-practices that are being used in these institution for adopting e-learning?
• What is the scenario of e-learning practices that are being adopted in these institutions?
• What is the opinion of the students, staff and lab administrator regarding the e-learning practices that are being adopted in the institutions?
• How expertized are the faculties and lab administrators in using e-learning tools?
• What is the opinion of various participants (staff, students, lab administrator) regarding the concept of e-learning and its other aspects?

5.4.0 STATEMENT OF THE PROBLEM

A Study of E-learning in Gujarat.

5.5.0 OBJECTIVES OF THE STUDY

1. To study the infrastructure available in the institutions adopting e-learning practices in Gujarat.
2. To study the forms of e-learning adopted in higher education institutions in Gujarat.
3. To study the e-learning facilities available in the higher education institutions in Gujarat.
4. To study the opinion of the faculties, students and lab administrators regarding the e-learning practices being adopted in higher educational institutions of Gujarat.
5. To study the opinion of the faculties, students and lab administrators regarding the concept of e-learning.
6. To know the abilities of the faculties, students and laboratory administrators with respect to use of various e-learning tools.
7. To study about the future scope of e-learning in Gujarat.

5.6.0 DELIMITATIONS OF THE STUDY
The study is delimited to the higher education institutions of Gujarat which are adopting the e-learning practices.

5.7.0 DEFINITION OF THE TERMS
E-LEARNING: E-learning includes all e-based practices carried out for the purpose of teaching-learning, training, evaluation etc using internet/intranet in blended mode or fully online mode.

INFRASTRUCTURE: In the present study the infrastructure available includes personal computers, internet connection, its type, number of computers in the lab, network connection, its type and accessibility, data transfer speed in the network etc.

FORMS OF E-LEARNING: In the present study, the forms of e-learning include intranet, email, blogs, chats, video conferencing, computer based training, web based training, virtual classrooms etc.

E-LEARNING FACILITIES: In the present study, e-learning facilities include, online study materials, online syllabus, online programme information, online examination scheme, online question banks, online sample questions papers, e-portfolios of students, online attendance records, online results information, links to web pasges, online assignment postings and feedback, online tests or quizzes, open formus, chats, web seminars, e-books, application sharing, digital libraries, video conferencing etc.

OPINION REGARDING E-LEARNING PRACTICES BEING ADOPTED: In the present study, opinion regarding the e-learning practices being adopted includes aspects like how often the content is updated, how often students logon to intranet, do
the students get guidance with respect to these practices etc. It also includes the opinion of the faculty regarding the e-learning practices being adopted at the institution in terms of guidance, academic efficiency of students, their professional efficiencies, personal benefits, professional benefits etc.

OPINION REGARDING CONCEPT OF E-LEARNING: In the present study, opinion regarding concept of e-learning includes aspects like effectiveness of learning in e-learning, advantage and dis-advantages of e-learning.

ABILITIES: In the present study, abilities includes the expertise of the faculties and lab administrators in using computers, internet and other e-learning tools like virtual learning environment, web pages authoring, video conferencing, electronic white boards, learning softwares, computer based assessments etc.

FUTURE SCOPE: In the present study, the future scope of e-learning would be known in terms of aspects like sharing of the e-learning modules with other institutions and its basis of sharing.

5.8.0 RESEARCH METHODOLOGY

The target group for the study consists of faculty, students and laboratory administrators belonging to the higher education institutions that are adopting e-learning practices in teaching-learning, evaluation, and training etc. either in blended mode or fully online mode. The present study is a survey research where the researcher made an attempt to study the e-learning practices of the institutions with references to various aspects like, the forms of e-learning used; the problems faced by them in using e-learning; opinion of the participants regarding the e-learning practices being adopted in their institutions, their opinion regarding the advantages and disadvantages of e-learning, their opinion regarding the concept of e-learning, and other virtual initiatives etc. The methodology meant for survey research was used in the present study which is given as under.

5.8.1 POPULATION

The population for the present study consisted of all the faculties, students and lab administrators of higher educational institutions of Gujarat which are adopting e-
learning practices (blended or fully online) in teaching-learning, training, evaluation etc.

5.8.2 SAMPLE
In the present study, the sample consists of 83 faculties, 153 students and 12 lab administrators belonging to 22 higher education institutions (i.e., 35 colleges) and 10 other institutions that are using fully online mode of e-learning for providing few of its courses. In this way, an attempt was made to ensure that the sample for the study was collected from all parts of Gujarat and included the institutions that use either blended approach of e-learning or fully online approach of e-learning.

5.8.3 TOOLS FOR DATA COLLECTION
Questionnaires were prepared by the researcher to collect data from faculty, students and lab administrators. The questionnaires were available in two forms i.e., e-form when the data was collected through e-mail and paper form when the data was collected personally.

5.8.4 DATA COLLECTION
A list of higher education colleges in Gujarat was acquired through internet and the colleges which did not have their website were excluded from the study. A request letter informing about the nature of the study and also requesting the permission for data collection was sent to the heads of colleges of those higher educational institutions which were having their functional website. Wherever, the emial ids of faculty and students were available on institutions’ website, a personal letter was sent to faculty and students requesting them to fill up the questionnaire.

Apart from this, researcher also acquired permission from few institutions for collecting the data personally. Researcher personally visited such institutions and observed their e-learning practices and also collected the data. Thus the data was collected personally from 12 higher education institutions (22 colleges) and through e-mail from 10 higher education institutions (13 colleges).
In case of institutions offering fully online courses, as mentioned earlier, as the researcher could not get any response from those institutions, an attempt was made to carry out a detailed study of their websites. In carrying out this detailed study, researcher selected 10 such institutions that have credibility in terms of higher education, clientele, popularity etc.

Thus, the data was collected by the researcher for a period of one year from 2009 to 2010 through emails, personal contacts and study of websites.

5.8.5 DATA ANALYSIS
The data collected was analyzed based on percentages, frequencies, intensity index etc. The analyzed data were then synthesized and presented in tables, figures. In the event of missing data or invalid answers, the questionnaire was considered void and not used in the analysis. This was done to be consistent as the online survey could not be sent back to the participants and was therefore considered invalid if few questions were left unanswered.

5.9.0 MAJOR FINDINGS

INFRASTRUCTURE FOR E-LEARNING

- Most of the faculties in higher education institutions had individual personal computers with internet connection for them in their staff rooms.
- Almost all the higher educational institutions had more than one computer lab and they had sufficient number of computers as per their students' strength.
- Almost all the institutions had high bandwidth connectivity and much secured network connectivity with free and unlimited internet access in staff rooms and computer labs.
- Only few institutions were using CMS/LMS (Campus Management System/Learning Management System) for providing e-learning practices. On the other side, majority of institutions were using the basic digital technologies to provide e-learning facilities.
FORMS OF E-LEARNING

- When it comes to blended form of e-learning approach, most of the institutions were using the basic e-learning practices like intranet and e-mail while the practices like blogs, video conferencing, WBT, chats, virtual classrooms were adopted at a very minimal level in the institutions which are adopting the e-learning practices.

- Apart from this, many higher educational institutions were making use of their institutional website to adopt either blended approach of e-learning or fully online approach of e-learning. These institutions were offering many self-paced courses in module formats in various areas of studies either through their institutional websites or through their telelearning centers. Some of the institutions also had virtual classroom. As a part of their virtual initiatives, many institutions uploaded their courseware, recorded video sessions, interactive tele-conferencing sessions, online counseling sessions, sample question papers, question banks, online assignments, lab manuals on to their website.

E-LEARNING FACILITIES AVAILABLE

- From the data collected, it was very difficult to generalize about the facilities of e-learning that were available in the higher education institutions. The most common available facilities of e-learning were Online Study Material, Online Syllabus. While Assignment Feedback, Tests or Quizzes, Open Forums, Web Seminars and Digital libraries were the least available e-learning facilities.

- Regarding the fully online approach of e-learning in higher education institutions, a wide range of fully online initiatives were also being taken up in higher education institutions under the titles like iLearn, FlexiLearn, EduNxt, online learning etc. Some of the institutions were charging the students for the courses and the services that they were offering to them while few institutions were providing these services free of cost with the help of their institutional website. Some of the institutions were using a mixed strategy i.e., to provide a few services free of cost and to provide some services with a payment. However, till date, most of these practices were visible in institutions offering
professional courses like management courses, engineering courses, computer courses, chartered accounts, company secretaries etc.

OPINION REGARDING E-LEARNING PRACTICES

- It was observed that most of the higher education institutions were using the e-learning practices since last three years and in very few institutions it was mandatory for the faculties to use e-learning practices in their teaching-learning, evaluation and other aspects.

- Both students and faculties felt that the e-learning practices adopted by the institutions were at very basic level and hence they did not need any special guidance in this regard.

- In many of the institutions, the faculties responded that the teaching-learning content that is once posted on the intranet was available to the students throughout the year and in most of the institutions the e-learning practices were being used mostly at Masters, Bachelors and Executive Programme levels.

- Further, a majority of faculties and lab administrators felt that the e-learning developments happening in their institutions were at moderate level and a less majority of the participants strongly agreed that the e-learning practices were helping in improving their academic/professional efficiencies. Factors like the basic level of e-learning practices being adopted in the institutions, the less effectiveness of the content that is posted on intranet, the moderate level of e-learning developments happening in the institutions etc, could be some of the reasons why both the faculties and students do not strongly agree that the e-learning practices are helping in improving their professional/academic efficiency.

- Majority of stakeholders are satisfied with regard to the e-learning practices being adopted in the institutions.

- Even though the institutions have sufficient level of infrastructure and supporting resources like computers, network connectivity, internet connection, high bandwidth, secured network, software specialists, latest software etc the stakeholders were not fully satisfied with the e-learning practices being adopted in their institutions.
OPINION REGARDING THE CONCEPT OF E-LEARNING

- Most of the responded faculties believed that e-learning has a good value in teaching-learning. A clear perception of the participants regarding the comparative efficiency of learning in e-learning platform and the traditional mode could not be obtained.

- According to respondents gender did not appear to moderate the response of students in e-learning mode and academically well prepared students respond more positively to e-learning practices of the institution than academically less prepared students.

- Regarding the benefits of e-learning, the stakeholders 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. However, both faculties and students expressed that e-learning platform is not of that help in maintaining transparency in the system. 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.

- In terms of stakeholders' perception regarding the dis-advantages of e-learning, all the 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 through this mode. They also said that as the e-learning modules are available for a longer time, it reduces students' interest towards these modules as they develop the tendency of postponing their tasks. Further, 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.

- In terms of challenges or barriers to e-learning, it can be seen that most faculties felt that adopting e-learning does not increase their work load and they also believed that students were capable enough to work in e-learning mode and hence these aspects were rated as least barriers. The two factors that were considered to be the highest barriers in adopting e-learning practices at
institutional level by the faculties were unreliable technology and lack of interest and confidence on the part of faculties to use the e-learning practices.

USE OF E-LEARNING TOOLS

• In terms of familiarity with various e-learning tools like virtual tutorial/learning software, computer based assessments, virtual learning environment tools etc, most of the faculties have tried these tools at least once or have not used them at all. A very meager percentage of faculties claim that they are expert users with reference to their familiarity with the mentioned e-learning tools. Comparatively, lab administrators were found to be more familiar than faculties in this regard.

• Most of the lab administrators and faculties consider themselves as expert user with respect to e-learning tools. A very meager percentage of faculties feel that they are champions in terms of their expertise with e-learning tools.

SHARING OF E-LEARNING MODULES

• Most of the participants wish that the institutions should adopt the practice of sharing the e-learning modules. Almost all i.e, students, faculties and lab administrators believed that this practice should be adopted.

• Most of the faculties expressed that the basis of sharing these modules should be on “No profit No Loss” . However, majority of students expressed that the basis of sharing should be “Free of Cost”. Lab administrators are also more inclined toward sharing of these modules on “No Profit No Loss” basis.

5.10.0 EDUCATIONAL IMPLICATIONS OF THE PRESENT STUDY

The findings and interpretation of the data helped the researcher to derive following educational implications

• It was observed during data collection that majority of the institutions have started using the e-learning practices just as a routine exercise and they did not make any special efforts to orient their faculties regarding the benefits of such practices. As a result the potential of the institutions in terms of human and physical resources to adopt e-learning practices is not being used optimally.
Hence, it is very essential that the institutions should take proper measures to develop awareness and readiness regarding the e-learning practices among the faculties.

- Most of the educational institutions were using the basic digital technologies to provide the e-learning facilities. However, if they put into practice the systematized aspects like LMS/CMS they will be able to easily track the performance of the students and will also able to make optimum use of other aspects of e-learning platform.

- Majority of the institutions have sufficient level of infrastructure to adopt the e-learning practices which is a very good sign. Hence, if the institutions want to reap the optimum benefits of e-learning platform, they should develop and put into practice proper feedback and evaluation mechanisms to know opinion and performance of various stakeholders regarding the e-learning practices being adopted in their institution.

- The findings of the objective 2 and 3 of the study revealed that various forms of e-learning with many e-learning facilities were available in the institutions. However, all the stakeholders were not equally aware about these things. Hence, the institutions should take proper measure to ensure that all the stakeholders become properly aware about the forms and facilities of e-learning available in their institution.

- The content that is posted on the intranet would be effective only when it meets the needs of the students. Hence, the faculties should acquire the skills for developing the content which suits the e-learning platform. For all this to happen, institutions should organize special trainings to the faculties and orient them regarding various aspects which should be kept in mind while developing the content for e-learning platform. Institutions should thus take measure to increase the motivation of faculties towards this platform.

- Institutions should also take care to see that the e-learning practices adopted in the higher education institutions not only act as a medium to promote teaching-learning, evaluation, training and other aspects of institutions but it also becomes a source for increasing the professional/academic efficiency of its stake holders.
During the study it was observed that optimum use of the e-learning platform was made in such institutions where it was mandatory for them to use the practices. Hence, institutions can also think about making the e-practices mandatory for both the faculties and students. Institutions can also think about mechanisms to boost up the motivation of the faculties towards this platform.

- Difficulty in tracing the real performance of the students is seen as one of the biggest dis-advantage of e-learning platform. Putting in practice the system of LMS/CMS by the institutions would help in removing this dis-advantage.
- Institutions can also on an experimental basis expose their students and faculties to the various e-learning courses, modules, virtual labs, webcasting, live lectures etc hosted by various organizations like IGNOU, C-DAC, WebIIT (by IIT Delhi), University of Virginia etc.
- The e-learning forms like blogs, chats, and virtual classrooms are very powerful and hence measures should be taken by the institutions to promote the use of these forms of e-learning both by students and faculties. Initially the use of these forms of e-learning can be introduced through initiatives like project work, assignments etc.
- The fully online approach of e-learning is also catching the speed. Institutions are promoting their fully online approaches under various headings and through this approach they are offering various facilities of e-learning. If the formal educational institutions develop a tie up with them to use their facilities it can improve the quality of higher education.
- As emphasized from beginning, e-learning is a powerful medium. If the institutions want to reap maximum benefits from this platform, it is very essential for them to develop feedback and evaluation mechanisms with regard to their e-learning practices.

Institutions thus should realize that just putting into action the e-learning practices would not give them the maximum benefits in terms of educational outputs but it is the real satisfaction on the part of the stakeholder that would give the success to this initiative.
5.11.0 PROPOSED E-LEARNING QUALITY GUIDELINES FOR HIGHER EDUCATION INSTITUTIONS IN THE STATE OF GUJARAT

If higher education institutions follow a set of e-learning quality guidelines, the inconsistencies which tremendously reduce the effectiveness of e-learning platform can be removed effectively. Such guidelines would help the institutions to improve the quality of their e-learning practices. On the basis of the observations made throughout the study, the researcher would like to suggest the following e-learning quality guidelines:

1. The institutions should have an operational website.
2. Institutions should have a proper vision and objective in using the e-learning practices.
3. Institutions should have necessary infrastructure to adopt e-learning practices.
4. Institutions should use various forms and facilities of e-learning.
5. Institutions should provide training to it faculties and students regarding various aspects of e-learning (like: in use of various e-learning tools; in developing content in e-learning platform etc.)
6. It should be mandatory for all the faculties and students to use the institutions e-learning practices.
7. Institutions should develop a systematized framework of feedback and evaluation mechanism to evaluate their e-learning practices.
8. Institutions e-practices should develop academic/professional efficiencies of stake holders.
9. Institutions should have proper plans for sharing their e-resources with other institutions.

5.12.0 SUGGESTIONS FOR FURTHER RESEARCH

The present research study helped the researcher to gain a deeper knowledge about the e-learning practices being carried out in higher education institutions. The study also raised a frequency of questions regarding the e-learning practices being carried out in higher education institutions. From the gained experience, the researcher would like to provide following suggestions for further research:
• Even though the institutions claim that they use the e-learning platform, it can be noted that still they are in the infancy stage. Here there is a need to carry out deeper studies to evaluate the objectives/mission/goal of the institutions in adopting the e-learning practices. Such studies can also focus to know about the measures being taken in the institutions to make the optimum use of the e-learning platform. The findings of such studies will act like a guide for the institutions that would like to adopt the e-learning practices.

• Studies focusing on the pedagogical aspects of e-learning like which form of e-learning suits which type of content, which techniques/principles should be followed while developing the content in the e-learning platform etc can also be carried out.

• Deeper studies can also be carried out to know more about the quality of the forms of e-learning being offered in the educational institutions. Such studies would help in development of in-depth e-learning quality guidelines.

• Research studies should also be initiated to know more about the real e-learning practices being adopted in the fully online mode of e-learning. There is a need to carry out research studies specially dedicated to the fully online initiatives of the institutions. The studies should not only focus of the facilities offered by them or what is projected on their websites but should also focus of various internal aspects like response time, quality of content, troubleshooting support, expertise of the resource persons and other relevant aspects. Deeper qualitative studies should be carried out to study if any gap exists between what is displayed and what is exactly happening in the fully online mode of e-learning.

• The number of institutions in India offering the same course in face to face mode and in fully online mode is on rise. 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.

• E-learning is a very costly affair. Hence, there is a need to carry out studies in various dimensions in this area. More directive and deeper studies can be carried out to obtain information on aspects like how e-learning is helping the participants, how it is contributing to the professional efficiency of faculties, how it is contributing to the academic efficiency of students etc.
• From the obtained data, the reason for why the faculties did not use the e-learning tools and why they considered themselves not as champions was not clear. Hence, the investigator feels that there is a need to carry out studies to know the attitude of the faculties towards these new technologies. Also there is a need to carry out studies to know the initiatives being taken up by these educational institutions to ensure the optimum use of this platform. Otherwise such initiatives would remain like a showoff without contributing to the real output.

5.13.0 CONCLUSION

In majority of higher educational institutions that are adopting the e-learning platform, faculties have individual personal computers for them in their staff rooms and most of these computers are connected to internet. Many of the higher educational institutions also have Wi-fi connectivity in their campus and hence in such institutions the concept of physical computer lab did not exist. In the institutions which did not have Wi-fi connectivity in the campus, there were sufficient numbers of computer labs. Almost all the higher educational institutions have more than one computer lab and in many of these institutions, there were sufficient number of computers as per the strength of students. Further, in majority of the computer labs of the institutions, all the systems have internet connection. All the labs have cable or wireless or broadband connection for internet and no single lab has dial-up connection. In most of the institutions they have a special software specialist for the purpose of adopting e-learning practices, and they also have authoring tools which are required for the purpose of adopting e-learning practices. The institutions also have high bandwidth connectivity and much secured network connectivity with unlimited internet access. Many of the institutions have the latest software with them. A very few percentage of institutions were using LMS (Learning Management System) for providing e-learning practices. The CMS/LMS (Campus Management System/Learning Management System) of the institutions has facilities related to attendance, results of students, students’ assignments, downloadable programmes and software’s which are useful to the faculty and students. CMS of a few institutions also provided access to the digital libraries of their institutions. Institutions use software and applications like Moodle, Acado, google docs etc to download and upload assignments. Most of the institutions
use basic digital technologies to provide e-learning facilities. This shows that there is still not a particular high level of sophistication in the usage of e-learning practices among major institutions. Both the students and faculties agreed that the infrastructure available in their institutions is favourable to adopt the e-learning practices. However, the percentage of faculties and students falling in the category of strongly agree was very less which shows that institutions have to put some more efforts in improving the infrastructure in order to improve e-learning practices. Also during the data collection, the investigator observed that most of the institutions do not lack the infrastructure and in fact, in some of the institutions, the infrastructure required for implementation of e-learning practices is excellent. They have aspects like wi-fi campus, fully networked systems, excellent trouble shooting support system etc.

When it comes to blended form of e-learning approach, most of the institutions were using the basic e-learning practices. Few institutions were using software like pen starter, turnite etc in their e-learning platform. On one side the faculties claim that they have favourable infrastructure for adopting e learning practices and on the other hand they were using only basic e-learning practices like e-mails, intranet in their teaching-learning process etc. The reason could be that either faculties were not interested in using the practices or they do not have sufficient expertise to use the e-learning practices.

Further, the tools like blogs, virtual classrooms, and video conferences were used to a very less extent by the institutions as a part of their blended approach of e-learning. The cause for this could be that either faculty were not aware about how to integrate the use of these forms in their teaching learning process or the nature of content to be transacted is such that it does not demand the use of such facilities.

Thus, it can be deduced from the above that the dominant forms of e-learning in the institutions were intranet, e-mail and CBTs. This again reveals that there is still not a particularly high level of sophistication in the usage of e-learning among the majority of the institutions.

The collected data shows that many e-learning facilities were available in the higher education institutions but the awareness about these facilities is lacking among the
students and faculties. It was also observed that there is discrepancy regarding the awareness about the facilities of e-learning available in the institutions among the students, faculties and lab administrators. The reason for this could be that the management of the institutions has taken decision on the use of e-learning mainly because everyone else is doing it and no special efforts were made at management level to focus on pedagogical and didactic aspects of e-learning.

Further, as most of the technical work related to the e-learning platform is done by the lab administrators, it can be clearly observed from the data that in almost all the cases the lab administrators were more aware about the available facilities than the faculties and students. On one side, the awareness in case of availability of facilities like online attendance records, online assignment posting and submission, assignment feedback, tests or quizzes is more among the faculties than students. This shows that might be faculties were doing it for the sake of doing it and were not taking efforts to inform students about this. On the other hand, the awareness about facilities like online study materials, online syllabus, sample question papers, results information is more with the students than faculties. This could be because, in most of the institutions such material were uploaded to intranet by lab administrators and not the faculties. In case of facilities like online results information, open forums the students were more aware about these facilities than faculties.

Coming to the fully online approach of e-learning, a wide range of fully online initiatives were being taken up in higher education institutions in various names like ilearn, FlexiLearn, EduNxt, online learning etc. Till date, most of these practices were visible in institutions offering professional courses like management courses, computer courses, engineering courses, chartered accounts, company secretaries etc. These institutions were offering many self paced courses in various areas of studies either through their institutional websites or through their tele learning centers in module formats. Some of the institutions also had virtual classroom. Some institutions were even providing the features like video on demand and video conferencing programmes on their websites. As a part of their virtual initiatives, many institutions uploaded their courseware, recorded video sessions, interactive tele-conferencing sessions, online counseling sessions, sample question papers, question banks, online assignments, lab manuals on to their website. Some of the institutions also offered
SMS alert services to its students. Some institutions also developed knowledge portals especially for its students and faculties.

Further, as a part of fully online initiatives, it can be seen that the institutions were taking many steps to make the optimum use of e-learning platform in their teaching-learning, evaluation and other purposes. The most commonly observed features which were being used in the institutions that were using fully online mode of e-learning were the use of WBT's, uploading of video conferencing sessions, virtual classrooms, digital repositories, SMS services, Chat services etc.

Also, during the process of data collection, the investigator observed that the virtual initiatives being taken up by the institutions like ICSI, IGNOU, BAROU etc were worth praising. They were making many efforts in the direction of making maximum use of both blended mode of e-learning and fully online mode of e-learning.

With respect to fully online initiatives of the institutions, investigator made many attempts to contact many virtual universities and other online institutions but could not get any response from them. This raises the questions regarding the aspects like response time, quality of content, troubleshooting support etc of these institutions.

It can be observed that most of the educational institutions have started using the e-learning platform from more that 3 or 4 years and in majority of these institutions it is not mandatory both for faculties and students to use this platform and hence still the traditional practices were being adopted in these institutions. However, in the institutions where it is mandatory to adopt e-practices, most of the work by the faculties and students is done through e-platform only. Faculties have to compulsory maintain their online students registers, they have to compulsorily post the students results on the intranet/website, they have to upload all the assignments on e-platform and even have to accept the assignment submissions through e-mode. E-mail is also used as an official medium of contact between students and faculties. All the material useful to the students like old question papers, syllabus, teaching-learning content, useful software should all be posted on e-mode. In some institutions this task was done by faculties themselves and in some institutions the lab administrators handle the technical aspects like uploading of content, updating the content etc. In majority of
the institutions the content that is posted on the e-platform was available throughout the year and in most of the institutions the content updation was done regularly. In many of the institutions the e-learning practices were being majorly adopted in bachelors, masters and executive level programmes. The e-learning practices being adopted in the institutions were at a very basic level. The supporting environment existing in the higher educational institutions that were adopting e-learning practices was also very good. Most of the faculties and students did not have any complaints regarding the support that was available to them to troubleshoot various problems that arise during the use of e-practices. Both the faculties and lab administrators felt that the e-learning developments happening in their institutions are at moderate stage. In majority of the institutions students were not really satisfied with the quality of the content that is posted on the intranet. In some of the institutions the content that is available on the intranet was just the xerox copy of the material available in the books and hence students did not find it to be very effective.

Proceeding further, a very less percentage of students and faculties strongly agreed that the e-learning practices being adopted in their institutions were helping them in improving their professional/academic efficiency. However, majority of the participants agreed that the e-learning practices being adopted in their institutions were helping them in improving their professional/academic efficiency. Regarding the satisfaction of students, faculties and lab administrators with regard to the e-learning practices being adopted in the institutions, both the faculties and lab administrators were satisfied with the e-learning practices that were being adopted in their institutions however, majority of the students were neither satisfied nor dissatisfied with the e-learning practices that were being adopted in the institutions.

A very high percentage of faculties and lab administrators believed positively in the value of e-learning. A good point that could be observed from the obtained data was that both male and female students respond equally to e-learning practices. Most of the stakeholders felt 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. With respect to dis-advantages of e-learning as perceived by stakeholders,
all of them felt that e-learning mode reduces face to face interactivity and it is actually very difficult to trace the actual performance of the students. Availability of e-learning modules online for a longer time reduces student’s interest as they develop the tendency of postponing the work. Students did not feel that the content posted on the intranet is effective and hence they felt that often in e-platform real/effective learning does not take place. Thus the quality of the content that is posted in the e-platform was a big matter of concern for the students. A good point that was observed from the obtained data is that faculties and students themselves felt that they were capable enough to work in the e-learning platform. Also faculties themselves directly or indirectly felt that e-learning practices do not increase their work load and they were also interested in learning more about this platform.

The data obtained from faculties and lab administrators with reference to use of various e-learning tools showed that most of the faculties did not use these tools regularly nor did they consider themselves as expert users with reference to use of these tools. Thus, when faculties themselves feel that they are not champions in terms of using various e-learning tools we cannot expect that they would show interest in using such technologies in the classrooms. This again puts forward the point that institutions have just began this initiative of using e-learning practices and have not moved forward in improving the quality of these practices. It was observed during data collection that most of the faculties did not even know the names of these e-learning technologies and other concepts of e-learning and hence they did not even agree to fill up the research tool.

In the higher education institutions, many of the stakeholders were very positive towards the idea of sharing the e-learning modules among the institutions. If such practice is adopted, it can not only improve the quality of the practices but all the stakeholders will be easily able to take the advantage of the expertise that exists in other universities/institutions. This practice will also give proper directions for improvement of e-learning practices.

In the present scenario where the Government of Gujarat especially department of education is taking many policy initiatives to use ICT to its optimum extent in higher education, it can be observed that many of the higher education institutions of Gujarat
already have good infrastructure facilities to adopt e-learning practices. They also have many forms of e-learning along with many facilities. The students and faculty of these higher education institutions are positively inclined towards e-learning practices. In this scenario when every thing exists but it is not being used properly, there is an immediate need to take such measure which would develop the culture of using these practices in the institutions. Also, there is a need to carry out research studies which will reveal to the government regarding what exactly is happening in higher education institutions in terms of its e-learning practices. On the other hand, 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.