A STUDY ON USE OF INFORMATION COMMUNICATION TECHNOLOGY IN HIGHER EDUCATION IN THANJAVUR DISTRICT

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INTRODUCTION

India has one of the biggest systems of education with a total enrolment of 189.2 million, with 81.1 million girl students and 5.45 million teachers in schools, nearly 10 million students in 350 universities and 15,000 colleges and 420,000 teachers. This includes 11 open universities and 104 distance education institutions of dual mode; and the Open University system has an enrolment of about 20 percent of the total. The rate of growth since Independence is quite high, coverage has increased, dropout rate has reduced, and the percentage of girl students in education is increasing.

Information Communication Technology (ICT) is potentially a powerful tool for extending educational opportunities and can provide remote learning resources. ICT encourage students to take responsibility for their own learning and offers problem centered and inquiry based learning which provides easy access and information based resources. It is necessary to acquire the ability to use technology as a tool to research, organize, evaluate and communicate information and the possession of the fundamental understanding of the ethical or legal issues and use of information. Today knowledge of networking, communication and retrieval technologies has become core to the profession. It is believed that the use of ICT in education can increase access to learning opportunities. It can help to enhance the quality of education with advanced teaching methods, improve learning outcomes and enable reform or better management of education systems.
The introduction of Information and Communications Technology (ICT) in education reflects and responds to present and future needs of people functioning in an intensely changing and challenging intellectual environment. Since the advent of the computer, the internet and the web numerous changes have occurred. The presence of IT has actually transformed the teaching, learning and administrative environment in post-secondary education worldwide and in order to keep pace with the rapidly changing landscapes it has become inevitable to implement technology integration.

**ICT HELPS TO EXPAND ACCESS TO EDUCATION**

ICT allow our access to information, enables new forms of communication, and serves many on-line services in the field of education. It frees both the teacher and student in the scholarly enterprise by eliminate traditional boundaries and restrictions to knowledge via the open and everywhere access that it offers.

- **Increasing Access to Higher Education**: ICTs are a potentially prevailing tool for Extending educational opportunities underserved community-spread and rural populations as well as all others who for reasons of cost or because of time constraints are unable to enroll on campus.
- **Whenever, wherever**: One important characteristic of ICTs is their ability to go ahead of time and space and increasing the flexibility of delivery of education so that learners can access knowledge from whenever, wherever. ICT has the potential to eliminate communication barriers such as space and time. Young (2002) found that ICT facilitated educational programs by removing several restraints of the geographical, time and physical. ICT eradicate time barriers in education for learners, Course materials can be retrieved and used 24 x 7. Thus, ICT enabled education will eventually lead to the democratization of education and make it viable to achieve learning which is demonstrated by a time delay involving the delivery of instruction.
- **Access to remote learning resources**: With the commencement of the internet and the World Wide Web, it is now possible to gain access to an unlimited amount of data and educational materials. Data in almost any subject and in a variety of forms of media can be accessed from anywhere at different times of the day and by an unrestricted number of individuals. Through ICT people have access to knowledge to carry on speed with latest improvements. ICTs also smooth the progress of access to resource persons, mentors, experts, researchers, professionals all over the world.
- **Enhance the Quality of Education**: Yuen et. al. (2003) stated that ICT advances the quality of education by facilitating self-learning, learning by doing, ability to communicate, critical thinking, and problem solving, information seeking and analysis, real time discussion, delayed time discussion, on line for instruction, and cooperate with each other. Through ICT, high quality of education can be offered. Researchers have also found that computers boost teaching and learning by giving opportunities to put into practice and to examine, offering superior access to related object and teaching and learning materials.

**HIGHER EDUCATION IN INDIA**

The Indian Higher Education System has established itself as the largest system in the world in terms of number of institutions and third largest in terms of student enrollment (after China and...
USA). India being one of the largest higher education systems in the world consisting of over 651 universities according to UGC as on 2013. Besides there are 31,324 colleges of higher learning in the country as on August 2011 according to the Higher Education in the 12th Five-Year Plan Report (2012-17). The number of students enrolled in the universities and colleges has increased since independence to 13,642 million in the beginning of the academic year 2009-10 with 1,669 million (12.24%) in the university departments and 11.973 million (87.76%) in the affiliated colleges (MHRD, Annual Report, 2009-10).

Higher education plays a pivotal role in the development of a country, as it is viewed as a powerful means to build knowledge based society. In India, higher education imparted by universities is facing challenges in terms of Access, Equity and Quality. The Government of India has taken several initiatives during the Eleventh Five Year Plan period to increase access to higher education by adopting state specific strategies, enhancing the relevance of higher education through Curriculum reforms, Vocational programs, Networking, Information Technology adoption and Distance Education along with reforms in governance.

ICT POLICY IN INDIA

The ICT Policy in higher education aims at preparing youth to participate creatively in the establishment, sustenance and growth of a knowledge society leading to all round socio-economic development of the nation and global competitiveness. The introduction of ICT in the higher education has profound implications for the whole education process ranging from investment to the use of technologies in dealing with key issues of access, equity, management, efficiency, pedagogy and quality.

- **Student-centered Learning:** ICT provides a technology that has the capacity to promote and encourage the transformation of education from a teacher directed enterprise towards student-centered models. As more and more students use computers as information sources and cognitive tools, the influence of the technology will increase to support their studies.
- **Supporting Knowledge Construction:** Learning approaches using contemporary ICTs provide many opportunities for constructivist learning and support for resource-based, student centered settings by enabling learning to be related to context and to practice.
- **Any place Learning:** With the help of ICT, educational institutions can offer programs at a distance mode. Today many students can use this facility through technology-facilitated learning settings.
- **Any time Learning:** Technology-facilitated educational programs remove the geographical barriers. Students are able to undertake education anywhere, anytime and at any place. This flexibility has provided learning opportunities for many more learners who previously were constrained by other commitments.
- **Information Literacy:** The growing use of ICT as tools of every day life have seen the pool of generic skills expanded in recent years to include information literacy. It is highly probable that due to the future developments and growth in technology, it will help further for information literacy.
THE FOUR RATIONALES FOR INTRODUCING ICT IN EDUCATION

<table>
<thead>
<tr>
<th>Social</th>
<th>Perceived role that technology now plays in society and the need for familiarizing students with technology.</th>
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<tbody>
<tr>
<td>Vocational</td>
<td>Preparing students for jobs that require skills in technology.</td>
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<tr>
<td>Catalytic</td>
<td>Utility of technology to improve performance and effectiveness in teaching, management and many other social activities.</td>
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<tr>
<td>Pedagogical</td>
<td>To utilize technology in enhancing learning, flexibility and efficiency in curriculum delivery.</td>
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Source: Cross and Adam (2007)

ROLE OF ICT IN HIGHER EDUCATION

The ICT plays significant role in higher education. It improves the learning process and facilitates the education system.

- **Improve Teaching Learning Process**: ICT make the teaching and learning process more effective and interesting. For example, when a teacher uses audio, video, or power point presentations in his/her lecture, the whole class becomes more attentive about the lecture and which automatically help the students to recognize the things easily.
- **Mode of Course Delivery**: Distance learning with course delivery through Internet (virtual class rooms) satellite and other mediums facilitates the education.
- **Vast Variety of study Material**: Use of ICT facilitate for students to get variety of study materials on a particular topic using internet from anywhere and anytime.
- **Administrative Support Functions**: ICT in administration of educational institutions play a major role in efficient utilization of existing resources and simplifies the administration tasks by reducing the paper work. It replaced the manual maintenance of record keeping to electronic maintenance of records which helps in easy retrieval of any information of students. ERP systems implemented in universities help complete student tracking and management aspects including admission, enrolment, fees payment, examination etc.
- **Assist in Research Activities**: ICT tools have also been extensively applied for research around the world where the information can be found easily. The researchers have a provision of online access of thousands of journals, articles, e-Books and publications etc. for their research work rather than the library book shelves and researcher also have a provision to submit online publications.
CHALLENGES IN INTEGRATING ICT IN EDUCATION

While considering the benefits associated with ICT but there are many challenges, which obstruct the exploration and exploitation of its opportunities. In view of integrating ICTs in higher education have following key challenges:

- **ICT Infrastructure:** The chief challenge before ICT to improved higher education is the availability of ICT infrastructure. In India large areas are still without a reliable supply of electricity, Internet service for on line learning and the nearby telephones are miles away and non-availability of suitable rooms or buildings to house the technology and access to computers in universities, communities.

- **Language and Content:** English is the dominant language of the Internet. A large part of the educational software produced in the world market is in English. In India where English language proficiency is not high, mainly outside metropolitan areas, this represents a serious barrier in exploiting the educational benefits of the World Wide Web.

- **Challenges related to finance:** Implementation of ICT in educational institutions is one of the big challenges due to high cost incurred for acquiring, installing and replace of latest software.

- **Lack of competent & professional teachers:** Enormous mass of teachers are not expert users of technology, particularly computer technology. Implementation of ICT in educational institutions is one of the big challenges due to high cost incurred for acquiring, installing and replace of latest software.

OBJECTIVES OF THE STUDY

The main purpose of this study is to explore the extent of usage of ICT in higher Education by the research scholars in Thanjavur District.

- To explore the role of ICT in Higher education and Research and to assess the use of electronic information resources by the respondents
- To identify and analyses specific factors that have hindered the use of electronic Information resources by the respondents
- To examine the respondents attitudes towards use of ICT in Higher education.

RESEARCH METHODOLOGY

The researcher adopted descriptive research design as the research aimed at describing the role of ICT in higher education and the researcher collected data from the research scholars of Tamil university in Thanjavur district. About 50 respondents pursuing Ph.D were selected through stratified random sampling in Tamil University, Thanjavur. Both primary and secondary data used for this study. The primary data were collected by using a pre tested questionnaire.
DATA ANALYSIS AND DISCUSSION

- **Attitude of Research Scholars towards ICT**: The survey found that a majority of respondents believe that ICT is essential for higher education and research. In order to assess the attitude of research scholars towards ICT, they were asked whether they felt that higher education and research would not be effective without ICT.

- **Effectiveness of higher education and research**: Nearly 60% of respondents strongly agree that higher education and research will not be effective unless ICT tools and techniques are used in the research process. Further, it is evident from this data that the scholars realize that ICT tools and techniques should become a part of higher education and research.

- **Need for ICT facilities in Higher Education**: This study shows that most of the respondents 40% recommended E-sources for remote access to use full for their research more than 30% utilized library web sites.

- **Use of ICT by Research Scholars**: The state of computer use by research scholars is encouraging. Nearly half use a computer daily, with another quarter weekly and only about 9% using a computer monthly. Nearly 3% never use a computer, which is quite discouraging. Although the students consider computers are integral part of higher education.

- **Purpose and Frequency of Internet Use**: The above table shows that majority of the respondents 60% using the internet for their research purpose remaining 12% use down load E-resource remaining 10 use E-mail purpose.
• **Impact of ICT tools and Techniques on higher education and research**: About 70% respondents say the impact of ICT tools and techniques on higher education is excellent. 20% says good so most of the respondents said ICT is very useful for their studies.

• **Constraints in using ICT**: Most of the respondents said that 40% says that the main problems to use the ICT services followed by dependent on electricity and high cost.
FINDINGS OF THE STUDY

• Most of the respondents says 68% have to own computer and internet use for their study purpose. The results show that more than 70% of the students explore the web for learning. But the survey shows the online assessments most of the respondents collected data for studying from the Internet. All the respondents depend on web pages for updating their knowledge.
• About half of the respondents says 60% uses a computer daily with another quarter weakly 9% using a computer monthly. A high majority of the respondents 89 % recommended Google was the main search used by the research scholar.
• Seminars are conducted by using LCD/PPT. Most of the scholars commented that they take seminars with LCD. They also said that they feel highly confident when they use LCD. On the whole, the scholar finds that only 80% of the scholar has effectively used ICT for acquisition of knowledge in their education course.
• Regarding the impact of ICT tools and Techniques on higher education and research most of the respondents opined the impact as excellent (70). Regarding problems in using ICT services Physical strain and mental strain were the main problems to use ICT service.
• Nearly 60 % of respondents strongly agree that higher education and research will not be effective unless ICT tools and techniques are used in the research process. Further, it is evident from this data that the scholars realize that ICT tools and techniques should become a part of higher education and research.

RECOMMENDATIONS

➢ The student support services such as course outlines, digitally recorded classroom material, discussion groups, laboratory manuals and lab assignments, lecture notes, live lectures for later viewing and re-viewing, links to course specific websites, online tutorials supplementary readings, and virtual office hours for teacher-student consultations should be strengthened to make high use of ICT.
➢ Internet service for online learning and the nearby telephones may be used to the maximum extent by the scholars pursuing higher education to house the technology and access to computers in universities, communities.
➢ English is the dominant language of the Internet. A large part of the educational software produced in the English. In India where English language proficiency is not high, mainly outside metropolitan areas, this represents a serious barrier in exploiting the educational benefits of the World Wide Web. So government should take effort to improve the language in school level it is very useful for higher education.
➢ ICT in educational institutions is one of the big challenges due to high cost incurred for acquiring, installing and replace of latest software. Hence the cost involved in ICT may be reduced.

CONCLUSION

The integration of ICTs in higher education is inevitable. The very high demand for higher education has stimulated significant growth in both private and public provision. Use of ICT in
education can increase access to learning opportunities. It can help to enhance the quality of education with advanced teaching methods, improve learning outcomes and enable reform or better management of education systems. The continued use and development of ICTs within education will have a strong impact on: What is learned, how it is learned, when and where learning takes place, & who is learning and who is teaching. ICT usage makes an open environment which facilitates storing and reusing information materials and also it facilitates the interdialogue among the teachers as well as students.

REFERENCES