

A Study On Feasibility And Effectiveness Of ICT Integration In Higher Education In Developing Countries With Special Reference To India

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Abstract— Information and communication technology refers to various forms of information and various means of communication used to share information. In present scenario, life cannot be imagined without ICT. Every aspect of life and society is driven by ICT in one or the other way. Education is no exception in this regard. Traditionally, Education refers to a learning process where knowledge is shared among two entities namely, teacher and student. In today's technological environment it is not simply give and take, but ICT has changed the entire scene. Education has been enriched by different means of ICT. The present paper is based on non experimental survey and study on use of ICT in higher education in India. The author tried to explore the ICT usage in education by faculty members of an engineering college. This study will eventually help to understand the feasibility and effectiveness of ICT usage to impart knowledge in such colleges where students come from both urban and rural areas of India. This study will help educators, researchers, and policymakers to establish more reasonable ICT integration practices so as to make education process keep pace with the technological development.

Index Terms— Education, Effectiveness, Feasibility, Government, ICT, ,Internet, Methodology, Technology

1 INTRODUCTION

Technology is not a new concept in today's world; rather it is woven in our lives in such a way that life cannot be imagined without it. Education is one area where new advancements in technology are integrated with the existing process for the betterment of teaching learning process. Education process is in a transition phase where the traditional practices have been challenged by researchers in favor of adoption of modern information and communication technology in teaching and learning process.

Education process will become more effective when ICTs- internet, video, audio, graphics, text, images, etc. combined in teaching. Governments of developed and developing countries are investing huge amount of money for establishment of ICT environment and training work force to perform efficiently with ICT integrated in education. When used appropriately, different ICTs assist in expanding access to education, strengthening the relevance of education to the increasingly digital workplace, and raising educational quality.

In spite of the rapid development of ICT, improved access to ICT-based educational technology, and the financial investments of educational institutions, faculty members do not always take advantage of modern ICT. One problem is that teaching practices have not always kept pace with, nor benefited from, advances in ICT. Technologies are not always effectively integrated into instruction to enhance teaching and learning.

Studies have shown that despite the rapid advancement of ICT, they are not always used effectively in the classroom [1],[2].

Sometimes, students do not know how to use the Internet effectively, and even teachers do not see the value of integrating the Internet into the curriculum or using it on a daily basis in the classroom [3],[4]. Sahin and Thompson (2006) found, "While technology is used more often in administration and research, its use is less frequent in instruction because the integration of computer technologies into teaching challenges the traditions and practices of faculty members and universities" [5]. Schrum, Skeelee, and Grant (2002) commented that the rapid development of technology has failed to shape teaching in higher education and that many instructors do not systematically integrate technology into their curricula. They stated, "Typically, professors use software tools, like word processors, but rarely use technology for teaching or require students to use it for assessment purposes" [6]. It is found that, the effective integration of ICTs into the educational system is a complex, multifaceted process that involves not just technology – indeed, given enough initial capital getting the technology is the easiest part – but also curriculum and pedagogy, institutional readiness, teacher competencies, and long term financing.

2 MODERN EDUCATION INTEGRATED WITH ICT IN INDIA

ICT has the potential to enhance information distribution, learning, teaching and managing of educational services and make them affordable and available anytime, anywhere.

For developing countries ICTs have the potential for increasing access to and improving the relevance and quality of education. As with changing times and technologies, education has equipped itself with various tools and methodologies.

It almost goes without saying that the Web provides extensive links to information on ICTs in education; platforms for educators to exchange knowledge, read and publish articles and lesson plans; and connections to support material.

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The role of the teacher in the classroom is being transformed from that of the font of knowledge to an instructional manager helping to guide students through individualized learning pathways, identifying relevant learning resources, creating collaborative learning opportunities, and providing insight and support both during formal class time and outside of the designated 50 minute instruction period.

3 ISSUES IN THE USE OF ICT IN EDUCATION

Like any other educational tool or mode of education delivery, ICTs do not work for everyone, everywhere in the same way. To study the frequency of the usage of ICT in higher education, author has done a non experimental survey based study. The faculty members of an engineering college were surveyed, where students come from both urban and rural areas. The questionnaire was designed in two parts; first part was to evaluate the frequency of usage of various ICT tools as taken by faculties in their teaching and second part was to consider the feeling or perception of the faculties about the usage of ICT.

4 PURPOSE OF STUDY

The purpose of this non experimental study was to examine the relationship between ICT integration into teaching and faculty members' perceptions of ICT use to improve teaching. The study was designed primarily to capture the frequency of ICT integration in college and estimate instructors' perception about ICT use for teaching purposes. The major objective of the study was to determine the instructors' perception of ICT use in the classroom and the impact of their perceptions and feelings on teaching practices.

5 SETTING AND SAMPLE

The sample included faculties of different departments from an engineering college at Khargone district (M.P.), India. A total of about 50 faculty members were included in the survey. Members from different departments like Computer Science and Engineering, information Technology, Master of Computer Applications, Applied Sciences, Humanities were surveyed.

6 FINDINGS & DATA RESULTS

The survey result of the research revealed the fact that most of the faculty members are using only popular ICT tools like internet, communication tools like email, mobile phones and productivity tools, like word, PowerPoint or multimedia tools frequently. The tools related to more of the content and practices on subject data are not frequently used by most of the faculty members. Faculty members from non technical backgrounds do not feel themselves much competent and confident in using ICT tools. The second part of the survey revealed the fact that most of the faculty members have faith in ICT tools that these helps in imparting education in a better way and teaching learning is not much hampered by technological barriers and issues related to it like congestion in network, system crashes or inability to deal with ICT tools. But they lack the practice, comfort and ease in using ICT tools.

7 IMPLICATIONS OF THE STUDY

We have seen that education have become a collaborative effort where traditional education practices were combined with new advancements in technology. As clear by this study, all the faculty members of different departments are not equally efficient in using ICT in their methodology, but they are trying to make use of most of these. Even if they are not trained or competent to use these ICT tools, they have an inner feeling of using this in their methodology. They agree for most of the times that education process when combined with technological advancements or tools of ICT gives better results. When teachers are trained in using ICT tools, they can better prepare their pupils to take challenges of the workplace of modern world where technology is embedded in many forms.

The results may help ICT designers and developers to understand current trends and issues related to the use of ICT for teaching purposes. From an educational aspect, the knowledge gained from this study may support an academic environment that will help faculty members integrate ICT into the teaching environment

The findings of this study will help researchers to understand how faculty members use ICT in their teaching and what they feel and think about ICT usage in education process.

Software developers may use the result of this study to design new software that will help faculties to increase the usage of ICT in their teaching in more powerful ways. The perception of educators actually gives an insight into the current scenario of practices involved and future demands and expectations from the technology.

The results indicated that the college instructors perceived ICT as a useful tool to foster effective teaching and learning environments, regardless of their teaching technique. The results also indicated that although the college instructors may have recognized the potential of ICT as an instructional tool, they were unable to integrate emerging ICT into teaching and learning. These promising conclusions could be the foundation for implementing professional development and training programs to promote the integration of ICT into the classroom and to help faculty members build confidence in their use of emerging ICT.

The findings also may raise awareness about the importance of the effective use of ICT and help to reduce the digital divide among college instructors at different colleges and in different disciplines. The results could motivate college faculty and administrators to pay more attention to their ICT integration and technology planning processes as well as consider how to have an impact on the instructional delivery process through professional learning and other support activities.

Effective integration programmes could be designed by the administration and academia so that teachers could include ICT in more effective ways and students could be benefitted by this plan in more versatile ways. The present scene in Indian colleges reflects the implementation status of ICT which says that despite the advancements in technology colleges are not much benefitted.

8 RECOMMENDATIONS FOR ACTION TO INCREASE EFFECTIVENESS OF ICT INTEGRATION

Most of the teachers included in the survey feel that technology is a tool by which teaching can be made more effective. This forms the basis for effective programme design to have ICT integration in education.

There is a need for awareness, training and implementation of ICT integration in higher education. If content specific tools are available then instructors from different streams would include more of ICT into their teaching.

The findings say that content specific tools and applications are used by those whose experience in teaching is more. This presents a need of training programme for teachers with less experience. As faculty members gain more control of the logistics of teaching and become more comfortable with the content, they are more likely to introduce such innovative teaching practices as technology integration into their teaching. These findings can be used by administrators, technology planning committees, and faculty development teams as the basis for the development of future technology planning and training that may help instructors overcome the barriers to integrate emerging technologies.

9 FEASIBILITY OF ICT INTEGRATION

ICT use in the classroom in developing countries is still in its fancy. Its overall effectiveness needs to be enhanced by better software and hardware as well as greatly increased availability of each. The rate at which ICTs will be used to enhance education depends mainly upon state and national monetary commitment, followed by the willingness of individual institutions to provide good in – service programs. Though there is no one formula for determining the optimal level of ICT integration in the educational system, creative teachers at all levels of education have always found ways to incorporate innovative teaching aids and strategies in their classes. In India, government is investing lot of money in establishment, training and usage of ICT so ICT usage is expanding every day, and growing exponentially. The need is to make it available for every student in every possible way and to make teachers competent in integrating ICT in their teaching methodologies.

10 CONCLUSION

The survey conducted and the study with respect to the ICT integration in Education revealed the fact that though participants feel that technology helps in the process of delivering education yet they do not feel comfortable in using tools of ICT. So, the need is to modify and upgrade the education system to adapt to modern requirements and incorporate new technologies. By introducing modifications and ICT integration in educational system better education can be provided to a larger segment of population thereby creating generation of students who will be up-to-date for the modern world and its demands.

REFERENCES

1. [1] Albin, R. (2006). Modern technology as a denaturalizing force. *Poiesis & Praxis*, 4(4), 289-302.
2. [2] Okojie M., Olinzock A., Okojie B., & Tinukwa, C. (2006). The pedagogy of technology integration. *Journal of Technology Studies*, 32(2), 66-71.
3. [3] Iding, M., Crosby, M., & Speitel, T. (2002). Teachers and technology: Beliefs and practices. *International Journal of Instructional Media*, 29(2), 153-170.
4. [4] Jonassen D., Marra, M., & Moore, J. (2003). *Learning to solve problems with technology: A constructivist perspective*. Upper Saddle River, NJ: Pearson Education.
5. [5] Sahin, I., & Thompson, A. (2006). Using Rogers's theory to interpret instructional computer use by COE faculty. *Journal of Research on Technology in Education*, 39(1), 81-104.
6. [6] Schrum, L., Skeele, R. & Grant, M. (2002). One college of education's effort to infuse technology: A systematic approach to revisioning teaching and learning. *Journal of Research on Technology in Education*, 35(2), 256-271.
7. [7] *International Journal of Engineering & Technology IJET-IJENS Vol: 11*
8. [8] www.wikipedia.com
9. [9] www.ignou.ac.in