Adoption of Information and Communication Technologies in Higher Education: Analysis and Findings during Covid-19 Pandemic

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ABSTRACT

Presently higher education in India is experiencing a major transformation in terms of access, equity and quality. This transition is highly influenced by the adaption of information and communication technologies (ICTs). Furthermore, it has expanded new opportunities for learning and accessing to educational resources beyond those traditionally available. Since last years due to COVID-19 pandemic the use of ICT has fundamentally changed the practices and procedures of nearly all forms of teaching methods. The introduction of ICT into teaching method changes the way education is conducted. ICT also paves way for a new pedagogical approach, where students are expected to play more active than before. There have been a number of factors impeding the wholesale uptake of ICT in education across all higher education sectors. Though there are some factors such as a lack of funding to support the purchase of the technology, a lack of training among established teaching practitioners, a lack of motivation and need among teachers to adopt ICT as teaching tools. Questionnaires are given to student, teacher and stack holders and from their opinion analysis has done. Though the use of digital media and ICT in education to become more important we should continue to grow and development. This paper highlights impact of use of these technologies into teaching and learning and explores analysis and finding.

Key Words: *Adaption of ICT, higher education, Teaching and learning, covid-19 pandemic*

1 INTRODUCTION

Teachers are at the core of any living society. Information and communications Technology (ICT) has the potential to improve all aspects of our social, economic and cultural life. The introduction of ICT into teaching and learning clearly changes the way education is conducted. ICT is popularly using in educational field for making teaching learning process successful and interesting for students and teacher both. In education, ICT can be viewed as the application of digital equipment to all aspects of teaching and learning. Education is a powerful instrument of social and economic progress, without which neither an individual nor a society can attain professional growth. But in recent Corana pandemic times, factors have emerged which have strengthened and encouraged moves to adopt ICTs into higher education institution. Analysis of how adaptation of ICT in higher education affects teaching and learning processes is done in this paper.

2. BACKGROUND OF THE STUDY

COVID-19 pandemic has impacted a large number of countries and is turning out to be even worse than the critical economic, strategic, and political clashes. By June 15, 2020, the pandemic spread to more than 200 countries [1]. It affects educational institutes badly and becomes mandatory to use ICT tools in teaching and learning. Since the Internet revolution, we can access videos, study materials and many learning material is available on computer. Due to ICT tools available, learning process not

affected in corona pandemic time in large extent. From literature survey it is seen that use of ICT in higher education is used by teacher in planning, and to a large extent in the supervision and evaluation of academic and administrative affairs. The objective of the study is to measure various impact of ICT on education and the consequences in implementing the ICT based education. It was seen that ICT have an impact on increase of the academic level of faculty members and students [2].

2.1 The comparison between ICT enabled teaching and traditional teaching method

The traditional teaching method is known to be instructor or teacher-centered methods while ICT teaching and learning teaching method is student-oriented approach. In the former the transmission of knowledge and information is realized with the usual form of lectures or discussions requiring physical presence of both student and the teacher. The contents of the lectures are manually driven because when the class ends the lectures cannot be achieved by students. The teacher carries too much of responsibility for teaching in the classroom to make sure everything they are teaching is understood by the students or not. Teacher has to make sure that students are paying attention or not while in ICT teaching is learner centered. Picture shows both methods.
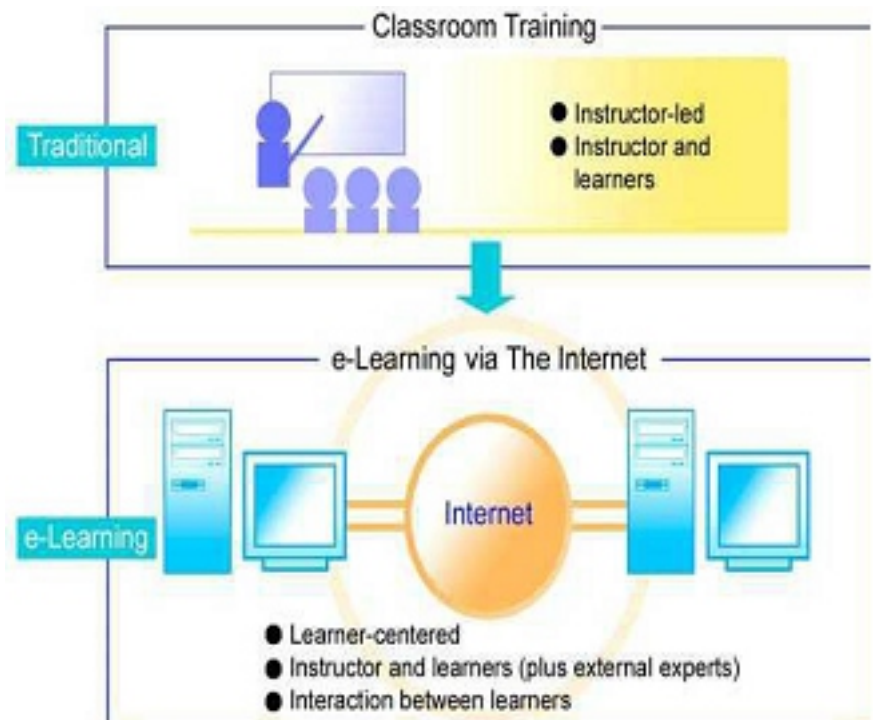
3. METHODOLOGY

The study was empirical in nature where survey method was used to collect the data. The data was collected from the students who are taught through ICT as well as Traditional Method .The aim of this research is to understand and find out the challenges that face the implementation of ICTs in higher education .The information presented is based on both primary and secondary data. Primary data has been collected using self structured questionnaires. Altogether Five questionnaires were distributed to and collected from students, teachers, and other professionals [3]. Factor analysis was done to identify underlying dimensions of respondent's perception towards traditional Teaching Method and ICT Teaching Method. Secondary information has been collected from various documents such as books, newsletters, reports, magazines, journals, daily newspaper, as well as from existing literature to understand the uses of ICTs for offering various levels of higher education in colleges.

3.1. Research Questions:

1. Is introduction of ICT in Higher Education is necessary?

2. What are benefits of use ICT in teaching and learning?

3. What is impact of ICT on students learning?

4. What are advantages ICT enabled teaching over classroom teaching

5. What are the barriers in using ICT by Teachers in colleges?

Information is collected from discussion with parent, teachers and students with respect to above question. From this discussion, analysis is done and my findings are as follow.

4. ANALYSIS AND FINDINGS:

1. ICT now creating education environments and underpins the very success of 21st century education. ICT also adds value to the process of learning and to the organization and management of learning institutions. Technology has the capacity to promote and encourage the transformation of education from teacher centered to student centered. Learning is now moves towards problem-based learning. Due to use of the Web as an information source, Internet users are able to choose the experts from whom they will learn. Studies have concluded that this was an ongoing digitization of higher education through use of technology. The use of ICT facility, the accessibility of available courses and programs at anytime, anywhere due to use technology in teaching and learning processes. The impact of ICT on students' learning is positive during Corona virus pandemic. During this time ICT education helps in great extent and protects them from covid-19 infection.ICT is supporting changes to the way students are learning as they move from content-centered curricula to competency-based learning [4].

2. Most significant benefit of ICT is time and place access. Now a day student can access their study material, homework both at their own pace and at their own place. Teacher develops new technology and implemented that for students learning. The students become active researcher and technology becomes the appropriate tool for them. So for this reason ICT is very much necessary for Teaching in Education. This facility enhances self confidence due self paced learning and dough clearance and also increases satisfaction of self learning. ICTs are also transformational tools which when used appropriately, can promote the shift to a learner –centered environment [5].

3.Use of ICT in higher education are extremely influencing for every discipline of education. It is affecting every aspect of education from teaching-learning to assessment and evaluation. It positively affects all the stakeholders of the education field. The communication capabilities of ICT provide opportunities for many student to enroll in courses offered by external institutions, rather than those situated locally. The regular use of internet is becoming a habit of some student [6].

4. The use of ICT in higher education provide freedoms of choice to accessed learning material at any place, at any time. This is not happening in case of classroom teaching, there limitation on learning resources. Students are now attracted towards new technology and it encourages and motivates them to learn ICT learning. ICT in education improves engagement and knowledge retention as student are more engaged in their work. New technologies that provide a good fit with existing practices in classroom teaching. The new facilities such as interactive whiteboards, Jam board, video conferencing, digital video provides good platforms. ICT allow for a higher quality lessons through collaboration with teachers in planning and preparing resources. ICT proves that students who used educational technology felt more successful in education. They have increased self- confidence and self-esteem. So, with government policies to provide internet access for every student and every college, proved that digital technologies will be as important in the twenty-first century as was the book in the nineteenth. There are now countless ways for students completing higher education using ICT [7].

5. Maintaining the quality of education is one of the very important challenges in India. Implementation of ICT requires changing teaching pedagogies in the classrooms from teacher-centric to student-centric. The teacher needs to find a suitable tool, experiment with the tool and then use it in the classroom. But there are some barriers in adaptation of ICT in higher education. Barriers are of two types (i) Institutional barriers (ii) Personal barriers. The institutional barriers are, absence of trained teachers in computer to teach practical aspects of computer skills, lack of computers, lack of quality software, technical problems, poor funding. And personal barriers are lack of teacher confidence, resistance to change, poor administrative support, and teachers' attitudes towards computers. Therefore,

we see that teachers are motivated to educate themselves for integration of technologies in teaching, but they lack the support from institutional leaders and colleagues. Without the active participation of the teachers, it is not possible. Changing the mindset of the teachers is essential to bring about this change. The institutional barriers are due to poor funding, the available funds are used to solve more urgent and important needs of the institutions.

Another problem is power supply [8]. If electricity supply is not stable and constant, it is difficult to keep ICT equipment and facilities such as computers and their accessories functioning properly. This problem also faces by rural student in higher education in benefit of using ICT. Also the cost of equipment in a country is very high. It has been seen that the adoption ICT tools by the teachers is enhancing effective teaching [9].

5. CONCLUSIONS

It has been seen that due to adaption of ICT in higher education brought considerable changes educational practice .Traditional forms of teaching and learning are increasingly being converted to online and virtual environments.

It is found that ICT have played a catalyst role in promoting the education. Teachers get adequate time to plan the content into their pedagogical practices to ensure high quality and appropriate learning.

It is found that student's performance, achievements and learning has grown profoundly by adopting ICT in teaching and learning. ICT education is now became need of time due to pandemic situation. In covid-19 pandemic different educational administrations have had to carry out a transformation in educational system from face-to-face teaching to online teaching using the use of ICT tools which is not interrupted and avoid the collapse of educational systems.

ICT adaption gives of windows of knowledge to student as well to teacher. It also seen that there are barriers such as lack of teacher confidence, poor administrative support and teachers' attitudes towards computers. I strongly recommend that educational institutions must adopt technology for its collective growth, but its implementation must follow scholarly approach.

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