

## ICT IN Higher Education: Its Implementation and Challenges

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### **Abstract**

This paper explains about benefits of implementing ICT in higher education to enhance self-managed and student centric learning. However, immediate implementation of ICT is not an easy task and shifting from conventional teaching to digital platforms is not an instantaneous process. There are many challenges which have to be addressed. Those issues include teacher capabilities, infrastructural facilities, support from management and availability of internet. These problems are experienced by both urban and rural parts of the country. The blend of technology in education system may look like a big challenge in the initial stages, but over a period of time it will bring a constructive change in the higher education system.

**Keywords:** Higher education, ICT implementation, Challenges, constructive Change

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### **I. The Benefits of Integrating ICT in Higher Education:**

Information and Communication Technology has become backbone of today's Education system. It provides numerous tools which facilitates the smooth function of the system with accuracy and transparency. Various tools of technology are used in the processes of administration, admission, teaching, learning, evaluation, research etc. Technology plays a vital role in teaching. Technology promotes and monitors quality education which is available for all levels of educators and learners. It provides tools that teachers can use in and out of the classroom to enhance student learning. There are many tools using which class room teaching can be made more interesting and effective. Faculty can equip these user friendly technology tools within short span of time. There are also numerous on-line resources about using technology to enhance teaching in a number of ways. ICT helps to enrich teaching capacity and effective learning. Technology blended teaching will help in perceptual and conceptual learning. It arouses interest and motivates students to learn. It is helpful to teach large number of students at a time. Recently, the ICT tools are intervening in traditional teaching pedagogy. Technology can make our education sector more dynamic and can have wide spread. The implementation of ICT in higher education can have more potential benefits. To obtain benefits the system has to overcome enormous difficulties. These difficulties may vary from subject to subject and from region to region based on the existing domains.

The most essential prerequisite of building prosperous nation is quality education and skillful youth. Quality education can be provided by integrating technology along with conventional mode of teaching and learning. ICT tools support teacher and student communities. By using technology in their teaching, the teachers can make teaching more interesting. They can make subject more interesting and save it for future. They can retrieve their work at any point of time and repeatedly use it for number of times.

### **NEED FOR IMPLEMENTATION OF ICT IN HIGHER EDUCATION:**

It is time for the education system to get transformed from conventional methods to digital platforms. This transformation in the delivery of education is pushing policymakers to figure out how to drive engagement at scale while ensuring inclusive e-learning solutions and tackling the digital divide. The major part of education system in India is based on conventional methods. In order to reach a large number of students the structure of teaching, learning and assessment methodologies must adopt ICT tools. Education must get adapted to the use of information and communications technology (ICT) to deliver their programmes offline as well as online for the benefit of students at remote places, which is a new experience to most teacher's students and parents.

It became mandatory for all the educational institutions to adopt ICT tools for teaching. The teachers and students should be given adequate training sessions at all levels of the system to get adapted to the new technologies. All the stake holders of this sector were prepared to address the consequences. Institutions

located in rural areas, may face many challenges to continue with their academic activities due to poor access to e-learning solutions.

The process of digitalization of education is well received by the institutions that have good ICT infrastructure than others; with some equipped and experienced than others; and between students within the same institution who live in urban areas and in rural areas who can barely afford to access the internet and its availability. It is time for all higher education institutions to improve and maximize their ICT operations. However, most of them do not have the capacity to fully deliver whole programmes online. Higher education institutions could easily shift to digital mode because their target groups are mostly mature students. While a significant number of higher education institutions have been implementing blended learning (a mixture of face-to-face and online learning) in order to increase access and improve learning, hardly any had intentions for their face-to-face delivery to be completely replaced.

Tools used for online teaching:

The apps for interactions and group meetings have become favorite tools in the Education system during lockdown, where significant achievements have been made in improving the quality of online teaching and learning in education institutions. Teaching is done through interactive apps like ZOOM, CISCO WebEx, Google Classroom etc. Many teachers are using WhatsApp for personal interaction and sharing notes. Assessments are also done using Google forms are used as platform for testing the knowledge of the students through multiple choice questions.

Experience has shown that quality online learning requires that the teaching material is prepared, and teacher is pedagogically trained for delivering the programme and the students are equally exposed to the pedagogy of online learning.

The worst affected programmes will be science and technology as students will be unable to access laboratories for their practical's. Yet, science and technology programmes are the ones that are most important for scientific development.

## **II. Challenges In integrating ICT Tools In Higher Education**

**Technological difficulties:** There are some institutions in both rural and urban areas which do not have computer facilities at all. Some institutions have few old computers. These computers frequently work very slowly and the students become impatient and disinterested in using computers. After installing many institutions ignore maintenance, which leads to mal functioning.

### **Teachers' refusal:**

Teachers have to be given intensive training to use ICT tools in teaching. The percentage of teachers using ICT tools is very less compared to the percentage of teachers who follow only conventional methods of teaching. Many of them even do not know how to operate it safely. Teachers are afraid of being embarrassed if they do not know how to operate a sudden stuck while using computers. Many senior lecturers will keep their status quo, keep the traditional pedagogy, and influence the junior teachers to reject the implementation of ICT tools with fear of being replaced by computers. Teachers have a perception that by using ICT tools, their teaching process will be too mechanized, everything will be strictly controlled and depend on computers/machines. The ICT implementation should also be supported by good coordination and management system on the ICT application. More members have to be recruited for technical help at the initial stages, and who will be responsible to help teachers in class, monitor the progress of ICT in teaching, or conduct ICT training. This aspect is very important since many teachers are reluctant to use technology in class because they frequently do not get immediate help when they stuck with computers in class. There is a need to revamp the existing curriculum which does not support intervention of ICT.

### **Financial difficulties**

Introduction of ICT at various levels of functioning of an institution cannot be done overnight. It is slow process which involves lot of finances along with skilled human resources. Many institutions have an opinion that it is a cumbersome process and do not opt for these tools.

### **Students' refusal**

Most of the students do not have personal systems. They depend upon institution for their work to be done using systems and internet.

## **III. Conclusion**

A well-rounded and effective integration of ICT tools in higher education system is needed for the capacity-building of young minds. It will develop skills that will drive their employability, productivity, health, and well-being in the decades to come, and ensure the overall progress of India.

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