

## INTEGRATION OF ICT IN TEACHER EDUCATION: PROBLEMS AND SUGGESTIONS

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### Abstract

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*In today's techno-intensive world, technology is an integral part of education. Over the last few decades, technology has been playing an increasingly vital role in the field of education, which has led to a profound improvement in the teaching and learning processes. The present learning environment demands that the teacher be skilled in use of technology to educate his pupils in an effective and efficient manner. Additionally, the school curriculum has to be in sync with the modern technology. In others words the curriculum has to so designed that it is easy to adapt and integrate it with the modern technologies of teaching and learning processes. This scenario requires that the teachers are trained and adept at handling modern techno-intensive teaching aids so that both teaching and learning become a joy for the teacher as well as the pupils.*

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## INTRODUCTION

We are living in an age of information and communication technology (ICT). There is hardly any aspect of human life which has not been touched and impacted by ICT. There is a huge generation of information in every field throughout the world. ICT is being increasingly used in the teaching and learning processes as it makes both these activities interesting, effective and fun. The use of ICT results in win-win situation for both the teachers and the students. The main aim of ICT in education is to improve student learning process through intelligent application of technology. Nowadays, intensive efforts are being taken in almost every country to transform the teaching force and educational staff into technology literate and skilled workers. Teachers in primary, secondary and tertiary levels are being trained in the use of information and communication technologies (ICTs). Needless to say, the quality of education depends upon the quality of teachers, which in turn depends upon the quality of

teacher education. In order to improve the quality of education there is a need to improve the quality of teacher education. The Education Commission (1964-66) emphasized that in a world based on science and technology it is education that determines the level of prosperity, welfare and security of the people and that a sound program of professional education of teachers is essential for the qualitative improvement of education.

As we see, both teachers and students are a part of an increasingly techno-intensive society. Change is the only constant in nature. So, teachers are expected keep learning new skills and to change and adapt themselves in order to keep pace with the modern developments, so that they can make optimum use of information and communication technology in their teaching process. Pertinently, the area of most rapid change is that of ICT. In today's world, teachers should mentor their students in how to learn, how to grow in future, how to develop study skills, how to conduct fundamental research, how to examine, evaluate and access information and also how to question and then dismantle unauthentic structure of knowledge and cognition, if need be.

### **ICT AND EDUCATION**

Internet is widely accessible nowadays, due to which popularity of online education has increased beyond imagination. Besides democratizing education, internet facilitates the acquisition of fundamental skills and access to isolated learning resources. It also promotes active learning and peer-learning or mutual learning. Because of the diversity of ICT as well as their application in educational situations, a thorough working knowledge of all these technologies is expected of educators in their teaching and learning process (Katz & Macklin, 2007). The National Curriculum Framework (2005) states that —ICT, if used for connecting children and teachers with scientists working in universities and research institutions, would also help in demystifying scientists and their work. Every teacher should know how to use technology, pedagogy and subject area content effectively in their daily classroom teaching. It is clear that merely introducing technology to the educational process is not enough. One must ensure technological integration since technology by itself will not lead to change. Considering the rapid rate of knowledge generation and dissemination, future teachers must be capable of using a variety of technological tools to impart education in all phases of academic, administrative, research and extension functions.

### **WHY DO WE USE ICT IN TEACHER EDUCATION?**

Gone are the days when classes were conducted in a traditional methodology, which was essentially a one-way mode of communication from the teacher to the student. The

classroom of today is essentially participative – the communication is not just two-way, it in fact three-way i.e. between teacher and students and amongst students as well. This not just develops mutual/ peer learning, it also develops the essential life skills of effective communication, emotional intelligence and confidence amongst the students besides teaching them teamwork. The net result is that the teachers as well as students participate actively in classroom discussions. This has made the teaching and learning processes more student-centric than before. Therefore, to use technology in this scenario, the teacher has to be competent and adept at using various modern technologies and ICT teaching devices. Basically, what ICT does is that it makes the communication between the teacher and the students easier. It enables the teacher to present his ideas and lessons in a manner which is not just effective and efficient but is also interesting for the students. It makes the lessons vivid thereby increasing the retention of students. This makes them active learners and helps to retain their attention throughout the class. Considering these benefits and the requirement of modern day education, training on ICT and ICT devices should be an essential part of teacher education.

### **PROBLEMS IN INTEGRATION OF ICT IN TEACHER EDUCATION**

Integrating ICT in teacher education is a demanding and complex task. There are significant challenges in integrating ICT use in education which arise from environmental, cultural and educational issues faced by policy makers, educators, educational administration and students in higher education. Given below are some of the constraints in the use of ICT in teacher training:-

1. The objectives regarding the application of ICT are being realized at awareness maturity level, but the use of ICT for the development of higher order thinking skills is very limited as ICT is not yet suitable for these skills.
2. There is a huge difference between curriculum of teacher education institutions and the secondary schools. Curriculum of teacher training institution is not in sync with school curriculum.
3. The syllabus of the teacher training course is vast, which leads to a situation wherein adequate time is not allocated for learning and development of essential ICT skills for use in education.
4. Adequate and suitable infrastructure and technological facilities for learning ICT skills are not available at most of the teacher training institutions.

5. Incompatibility between the hardware and software i.e. the hardware available at teacher training institutions is mostly old and is not compatible with the current software available for teaching and learning processes.

6. Mostly, teacher training institutions lack adequate and trained staff for technical maintenance of hardware and software.

### **WILL ICT REPLACE THE TEACHER?**

Obviously, ICT cannot replace the teacher. It must be remembered that ICT is an aid to teaching learning process to make this process more effective and efficient. But what ultimately matters is the quality of the teacher, the competence of the teacher in his/ her subject and his overall intelligence and wisdom which actually makes a lesson vivid, interesting and effective. In others words, though we have the machine to help us, but it is the man behind the machine who plays the most crucial part in this teaching and learning process. However, as we have discussed, the teaching learning process has become more learner-centric nowadays, due to which the role of the teacher has shifted from being a sole voice of authority to that of an active facilitator, mentor and coach for the students.

### **SUGGESTIONS FOR EFFECTIVE INFUSION OF ICT IN TEACHER EDUCATION**

Given below are some suggestions to make ICT training an integral part of teacher education and to make optimum use of ICT in teaching learning processes: -

1. ICT should be offered as a compulsory and special course; integrated approach should be there along with method courses. This will help student teachers to develop the concept of techno-pedagogy to a greater extent.
2. Respective authorities must ensure that there is effective ICT integration at the level of curriculum development, the examination system and that it is linked to teacher incentives.
3. There must be congruence between the school curriculum and the teacher education curriculum. Teacher education programs should have a judicious mix of traditional pedagogy and ICT component (Bhattacharjee, 2005).
4. Teachers should be provided adequate training so that they are competent enough to integrate technology into teaching and learning. They should be adept at making use of internet technology and accessing information on it for use in their teacher education and professional development programs.
5. Teacher training institutions may use a variety of strategies and creative ideas to provide adequate time for professional development of student teachers.

6. Teachers often face technical difficulties while using ICT in classrooms. Therefore, they should have easy access to technical supporting staff who can help in troubleshooting.

7. Effective ICT use in classrooms should be incentivized for teachers. This may take the form of promotions for teachers who innovate with (as opposed to merely using) ICT in the classroom, certification of training by Ministry of Education with grade and salary impacts, public recognition, reduced isolation and increased professional satisfaction.

## CONCLUSION

Teaching is an honorable position in the society. ICT is an aid to the teacher to teach well. It enhances the effectiveness of teaching learning process, thereby improving the quality of the education. Nowadays most of the changes in our day-to-day world are ICT-driven. We are already witnessing a rapid and major change in the educational field owing to the use of ICT. During the ongoing COVID-19 pandemic, ICT and allied technologies have emerged as the leading and most suitable platforms of teaching and learning process in the form of online classes. This pandemic has seen the boom of companies/ organization/ institutions which offer education through ICT platforms like internet classes, recorded lectures, podcasts, app based classes, Youtube classes, online meeting apps like Zoom, Meet, etc. So education has undergone a major transformation as demanded by the situation and this transformation has mostly been ICT-driven. Even though this transformation may not be permanent but then it has shown our society a way by which we can overcome unforeseen challenges like COVID-19 pandemic. Uncertainties like these makes it all the more important that teachers should be fully trained, skilled competent and comfortable to make optimum use of ICT in teaching learning process both inside and outside of the classrooms.

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