



ROLE OF ICT INTEGRATED PRACTICES IN THE ENHANCEMENT OF QUALITY TEACHER EDUCATION AT ELEMENTARY LEVEL

Imran Khan

Ph.D. (Education) Research Scholar,

Department of Educational Studies, Jamia Millia Islamia, New Delhi.



ABSTRACT

At present, ICT has been reflected as a scientific-technical discipline and management technique that is used and applied in various forms in socio-economic and cultural matters. Along with the educated section of the society, other people are also using it in their works. In today's modern society, full attention is being paid to the importance of using ICT in the teaching-learning process at every level of education. For which more knowledge is being expected in the field of teacher education regarding the skills of ICT. With the development of the understanding of ICT during pre-service teacher-education training program, it helps the prospective teacher to know the school level education better and impart quality education. The aim of this study is to examine the views of student-teachers about ICT technology and their integration in your professional course and practice followed by the teacher educators in this regard. All prospective teachers of the final year in District Institute of Education and Training's pursuing diploma in elementary education program were the population of the study. A total of 165 student-teachers were taken as the sample to participate in the study from four district institute of education and training (DIETs). The questionnaire was used for data collection. The study was designed with normative survey method, which is one of the qualitative research designs, and it was found as a result of the study that teacher educator in educational institutions are unable to use ICT properly in the teaching-learning process especially all ICT teacher educators are also unable to use it to teach in class. Based on the findings, it is the responsibility of the Higher Authority to take steps to create an ICT friendly environment in teacher education institutions so that all prospective teachers also include ICT in their methodology. And the level of quality in school education should be in accordance with the expectations of society. The findings suggest that this research places importance on education policy-makers as well as other stakeholders. They can use these findings to create regulations, and target specific groups of students in teacher education institutions to adapt to the technical educational quality environment and enhance the standard image of their institutions. The study recommends that policymaker should be given more focus on the organisation of ICT skills enhancement programs for the main stakeholders of teacher education.

KEYWORDS: ICT, Quality Education, Teacher Education institutions, DIETs, Student-Teachers

"We need technology in every classroom and in every student and every teacher's hand, because it is the pen and paper of our time, and it is a lens through which we experience much of our world".

- David Walrick

INTRODUCTION

In today's perspective, most of the things or activities related to life are related to scientific knowledge and technology. Due to its effectiveness and popularity, the demand for information communication and technology is also increasing rapidly in the teaching-learning process in educational

institutions. From the UNESCO World Education Report (1998), it is clear that in every school and institution of teacher education, students and teachers should have better and adequate facilities full of digital technology and the internet. In order to use all these digital technologies and the Internet, it is also necessary that teachers must have a high academic standard level of knowledge and skills to use the new digital tools. We all know that all these skills depend on the extent of ICT integration in the pre-service education program of the teacher.

Today's learners have access to knowledge and information through various means such as television, computer, internet and social media. In the current twenty-first century, ICTs appear as one of the most important tools to enhance the quality of pre-service teacher education programs. In the absence of proper knowledge of ICT, the teacher may not demonstrate the content in the classroom well and cannot even fully achieve the student's achievement level.

CONCEPT OF ICT

The concept of ICT as an important development mechanism is still a fairly recent phenomenon in many developing countries. The demand for a highly skilled workforce that uses ICT tools for innovation, creativity, improved performance and societal transformation is enormous. ICT comprises a complex set of applications and services used to produce, process, distribute and transform information (United Nations, 2005). The ICT sector consists of segments as diverse as telecommunications, television and radio broadcasting, computer hardware, software and services, print media and electronic media, including web technology such as the Internet. The term ICT has been used to encompass technological innovation and conveyance in information and communication leading to the development of information and knowledge societies with resulting changes in social interaction, economic and business practices, political engagement, education, health, leisure and entertainment (United Nations, 2005).

ICT is being used in various ways in the education world where it helps both teachers and students in understanding and application of their respective subject areas while at the same time it helps in the comprehensible assessment of many activities of students. Also shows the way to the teachers. In a technology-based teacher education program, the student learns a variety of rich educational audio videos, PowerPoint presentations, electronic mail, mind-mapping, guided search, brainstorming, etc. (Finger and Trinidad, 2002). On the other hand, many scholars have emphasized the greater benefit of students from the integration of ICT. ICT has now encouraged redesigning of subject curricula with technology-based activities in place of traditional curriculum and resources. ICT helps teachers to positively design their subject lesson plans in an effective-creative and interesting way so that the students are expected to have greater learning support. Results from previous research have proven that the use of ICT in teaching-learning will automatically maximize students' abilities in different areas of quality education (Finger & Trinidad, 2002; George et al., 2003; Young, 2003; Jameson-Proctor et al., 2013).

DEVELOPMENT OF ICT IN SCHOOL EDUCATION

In India, information and communication technology (ICT) in education was started in 1984-1985 by introducing the computer literacy and studies in schools (CLASS) program was on a pilot basis. The CLASS scheme provides financial assistance included annual maintenance grant and for purchasing types of equipment for the new school. After this, the new scheme was called ICT@Schools, as a comprehensive and systematic initiative to open new opportunities of learning to the school students. These important schemes led to works under the Information and Communication Technology @ Schools Program in the year 2004. Up-gradation of educational technology scheme gave science as well as language, humanities at the school level (MHRD, 2012). Since the advent of National Curriculum Framework 2005, there was a special emphasis on the role of Information and Communication Technology (ICT) in elementary and secondary education.

For which the use of ICT as an improvement in the quality of education was included in the education program of the Government of India, including the National flagship Program Sarva Shiksha Abhiyan to provide elementary education to all children from six to fourteen years old. ICT was also included

in the higher standard of schooling recommended by the Central Advisory Board of Education (CABE) report focused on the Universal Secondary Education Program in 2005 due to its widespread dissemination, providing information on the quality of schooling in India as a whole and It has become necessary to think in detail about the widespread improvement through information and communication technologies for improving quality of school education in India.

Indian teachers have now slowly started using technology in classroom teaching. With the aim of enhancing the quality of school education, the availability of technical equipment such as computers, LCD projectors, desktops, etc. has become essential for all the existing educational institutions (Bhattacharjee, & Deb, 2016). Therefore, the use of information and communication technology should be promoted in different curricula of teacher education in line with the demands of the present century as teachers are very important in creating a bright future for the students (Chauhan, 1992).

INTEGRATION OF ICT

According to Arneseth & Havelik (2012), "Integration of Information, Communication, and Technology (ICT) in education refer to the use of computer-based communication that incorporates into daily classroom instructional process. In conjunction with preparing students for the current digital era, teachers are seen as the key players in using ICT in their daily classrooms. This is due to the capability of ICT in providing a dynamic and proactive teaching-learning environment".

However, Alberini (2006) reflects that "ICT integration aims to improve and increase the quality, accessibility and cost-efficiency of the delivery of instruction to students, it also refers to benefits from networking the learning communities to face the challenges of current globalization". ICT is not a single phase, rather it is a continuous and continuous step from where a lot of resources in teaching and learning are received (Young, 2003).

ICT integration in the education sector is generally understood as a technology-based teaching and learning process that is more closely related to the use of learning technologies in schools because of the explicit fact that students are familiar with technology and that's why they will learn better. The issue of ICT integration is important in all these technology-based environments, especially in the classroom. The reason for this is that the more technology is used in education, the more its contribution will be reflected in educational aspects (Jameson-Proctor et al., 2013). According to George et al (2003), "It is correct to say that almost all categories of subjects from Mathematics, Science, Language, Arts and Human and other major fields are more effectively used through technology-based tools and devices, ICT Can be learned. Provides support and complementary support to both teachers and students, where it incorporates effective learning with the help of computers. "

Computer and technology add-ons are considered complementary to the success of quality teaching and learning processes. The need for ICT integration in education is important, as there is no difference in the teaching process not only in the school environment with the help of technology but also when teachers and students are physically distant (Young, 2003). The three main stages for ICT to be extremely cherished and regarded by the teachers; integration, enhancement and complementary has been recognized by the Hermans, Tondeur, Van-Braak, and Valcke (2008).

The integration approach is to be executive in nature, the correct use of ICT in a particular subject area that incorporates specific concepts and skills to improve the objective and attainment of the student's achievement level. From the point of view of proper planning and policymaking, there is a need for all changes in teaching and learning in the school. Duden (2010) stated that "national ICT policies can serve several crucial functions. They provide a rationale, a set of goals, and a vision of how education systems run if ICT is integrated into teaching and learning process, and they are beneficial to students, teachers, parents and the general population of a given country".

The Indian Ministry of Education "Ministry of Human Resources and Development" has framed various policies for ICT in education. As recommended by these policies, all policies are fully oriented towards allowing ICT to be used and to reduce the digital gap between schools. Emphasis was laid on the

widespread adoption of ICT in the information, communication and business sectors and the management of the necessary resources related to it.

It is clear from the earlier researches in India that basic infrastructure and facility of ICT are then needed to supply to the schools throughout the country. Use of ICT is possible only when the institute has a sufficient number of computers and ICT equipment available inside the computer lab. It is only possible to ensure that approximately all the subject teachers can use ICT tools whenever needed (Easily, Hennessy, Ruthven, and Brindley, 2005).

In our country, the lack of adequate ICT equipment and Internet facilities is also a major problem in rural educational institutions that run in comparison to cities. For example, a study conducted by Chappell (2011), research results suggest that some schools in Kenya have computers inside them, but their number may be limited to only one computer in an office. Where there are more students, the number of computers is less. In addition, the report also suggests that schools with ICT infrastructure are run by parental initiative or community power.

TEACHER AND INFORMATION COMMUNICATION TECHNOLOGY

In the last decades, planning and presenting the lessons were taken as the basic skills for prospective teachers. But in the present day, the teaching activities are more complex, refined, goal-oriented and competitive. Different disciplines need specific strategies to teach. Therefore, a teacher's task has become manifold concerning using diverse instructional techniques, maintaining classroom environment, developing and administering assessment tools, integrating technology and capturing students' interest (Khanam, 2015). Teachers' readiness and skills play an important role in education when using ICT. Adequate ICT skills are required by teachers to maintain high confidence levels when implementing technology in the classroom. Additionally, teachers also need a therapeutic insight into ICT use so that they can use it meaningfully (Henry et al, 2005). Vingenried, Delgarno and Tinkler (2010), reflect that "Teachers who are more effective at teaching using technology tools have no experience of such training." A school in Ireland reported that teachers did not develop enough confidence to avoid the use of ICT. According to Warwick and Keshner (2008), the importance and advantages of ICT can be understood by the fact that its use makes it easier to conduct meaningful text. Indeed, teachers should be sent through the Head of the Institute to participate in the training course program organized from time to time to achieve proficiency in the subject of integrating ICT in teaching and learning process. However, many schools also used peer-tutoring systems to improve teaching.

As has been discussed, there are various factors are responsible for enabling the use of ICT in classroom teaching. ICT Begin with policy follows by the supplement of all the ICT hardware and software facilities, continued by readiness and skills of the teacher to integrate it into the pedagogical process (Agbatogun, 2012). Research by Barak (2006) suggested that teachers are cautious about integrating advanced technologies in schools as they collaborate towards leveraging ICT for their personal development and learning. The reason, according to the research by Salouti and Barton (2007), is that teachers are cautious, such that they integrate time pressures, access to equipment, lack of mentors and opportunities for apprenticeship or observation that affect teachers Have the ability to Integrated. Globally, researchers believed that integrating ICT for educational purposes depends to a large extent on teachers' perspectives in terms of technology (Huang and Liav, 2005; Tao, 2008).

SIGNIFICANCE OF THE STUDY

The situation of the classroom is changing from time to time. In our country classroom, the knowledge is imparted by the teacher in a pre-modern way, But we all are clearly understood that Students learn from different sources and for this reason, use of Information and Communication Technology & Multimedia is very much essential in the field of school education to university education and simultaneously teacher's understanding about ICT and Multimedia also required in deepen. It has been seen increasingly important that starting teachers can adequately use technology in schools (Robinson & Aronica,

2015; Spector, 2010). according to the Becta and UNESCO, (2004), integrating ICT into classroom environments requires a successful ICT setup. These include appropriate amounts of hardware and software, computer systems in proportion to the number of students, commitment from the teacher's understanding to the use of technology-based learning, as well as ICT appropriate teaching methods and techniques.

Consequently, teacher training institutions are expected to prepare new teachers to integrate technology into their educational practice. Several studies suggest that to develop pre-service teachers' effective technology integration knowledge, teacher training institutions need to help them connect their technological, pedagogical, and content knowledge (including skills and attitudes) (Mouza, Nandakumar, Yilmaz Ozden & Karchmer-Klein, 2017; Sun, Strobel & Newby, 2017). Using ICT in various disciplines of education can help improve student problem-solving skills, theoretical understanding, and group productivity skills (Culp, Honey & Mandinach, 2005; Tao & Gunstone, 1999). Eigen and Kouchak (2003) stated, that "advantages to students on an internal level and suggested that technology can elucidate motivation in learners by compounding self-efficacy and self-esteem, increasing attendance, fostering goodwill towards educational institutions, eagerness towards activities outside the classroom and more student participation in learning activities (p.420)". The importance of teachers' behavior may appear to integrate ICT into the classroom in general (Chait et al., 2009; Drent & Meilison, 2008; Jimoyinis & Komis, 2007).

According to the changing scenario of the society every teacher education institution, the important aim is to prepare ICT-competent prospective teachers for the up-gradation of the quality school education in India. In this order to the present study investigates the perception of the student-teachers of diploma in elementary education about the integration of information and communication of technology in the teaching-learning.

RESEARCH QUESTION

Teachers are the important components of all the educational institutions from pre-primary to higher education and are motivated to provide education with quality. In this context, it is necessary to know "whether teachers in the Teacher Education Institutions, mainly elementary teacher education institutions, integrate the Information and Communication Technology during the teaching-learning process in the institutions or not"?

OBJECTIVES

The following are the objectives of the study:

1. To study the existing resources of ICT in the elementary teacher education institutions.
2. To study the usage of ICT as a pedagogy tool in a transaction of the curriculum by the teacher educators.

METHODOLOGY

The research on which this paper is based adopted a qualitative approach. In this study, a normative survey method was employed. The survey is an appropriate method to collect information on research topics and allows the researcher to obtain numerical information from respective populations. All the students registered in a two-year diploma in elementary education programme (D.El.Ed) of the four institutions constituted the population for the study. These four elementary teacher education institutions i.e. district institute of education and training were selected through the use of the simple random technique in Delhi. The self-constructed questionnaire was used to collect data in the study. The sample has consisted of 165 student-teachers randomly selected from the institutions. A questionnaire was used to ensure that all practitioners were asked the open-ended as well as close-ended questions and were, therefore, free to express their own opinions. Participants were asked to be honest about the integration of ICT in education. Data were analysed by mostly qualitatively but simple quantitative measurement also applied.

FINDINGS OF THE STUDY

- Most of the student-teachers agreed that they used social media applications such as WhatsApp, Facebook Messenger to receive various notifications sent by their teachers on related topics but seldom discussed such subject matter with them.
- In addition to face-to-face interaction, a number of student-teachers use the blog portal to write something about your views on an education issue or particular aspects of the content, while most students do not use this platform.
- More than half of the student-teachers stated that they could not use ICT in content transactions during the school experience program as many schools had ICT facilities but the computer lab was not functioning properly.
- Some percent of student-teachers say they used the Internet, text and video clips to create and present the PowerPoint.
- Majority of the student-teachers believed that they used to ICT in searching the reference material and making the assignments and subjects' files.
- All the students- teachers said that computer lab or ICT lab is available in the teacher education institutes. But most of them said that there is almost a lack of necessary equipment in labs. Due to availabilities of limited computer systems in the laboratory, students have to work together in groups on computer system.
- Most of the student-teachers expressed that the institute has a library for everyone, in which books and audio, videos on various subjects are available but that is not in keeping with our content.
- Many student-teachers replied that they feel that most of their teachers have the skills and knowledge to use computers, but do not know why they use them in limited form.
- Most of the student-teachers think that the classes of the education institution in which they are studying is not like a smart classroom.
- Most student-teachers reported that their teachers teaching of foundation-based subjects generally do not integrate ICT into teaching-learning.
- Most student-teachers responded that their teacher educators, especially those who taught teaching of language such as Hindi or English and other teaching papers such Mathematics, Environmental Studies, rarely used ICT in the delivery of content.
- Most student-teachers believe that few of the teachers who teaching the practice papers like their arts - education, work - experience, health and physical education - involved ICT in content transactions.
- Most of the students-teachers recognized that out of all the teachers who are teaching the subject of educational technology, there are still some teachers who are not able to integrate ICT in the teaching-learning process.
- Majority of the student-teachers believed that they used to ICT in searching the reference material and making the assignments.

CONCLUSION

In the current scenario, especially in school education, students are gradually moving away from textbooks to technologies like computers, mobiles, tablets and laptops. The advancement of ICT learning applications and programs allows students to learn at their own pace and have a similar learning experience, whether at home or in the classroom. It can be seen from the findings of research conducted in this field that teacher education institutes do not have adequate technical resources and ICT supported infrastructure. Most teachers are not fully using ICT while teaching teacher-education courses. Such results indicate that there has not been much improvement in the improvement of quality education in teacher education. According to these circumstances, an important question arises that how will our future teachers be able to work comfortably with technology in their schools with children? We have to make a lot of efforts in the field of pre-service teacher education institute regarding integration of technology. Because everyone in the field of education is aware of this technology that the use of different types of new digital tools and

resources enables the teacher to update different types of information skills. By using and preserving information and communication technology, teacher trainees can become more competent. Therefore, the policy planner, the head of the institutions, should consider enhancing the organization of ICT related references courses like workshops and conferences for teacher educators and student-teachers of teacher education institutions.

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Imran Khan

Ph.D. (Education) Research Scholar, Department of Educational Studies, Jamia Millia Islamia, New Delhi.