Technology Integration in Teacher Education Programme

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Abstract

Technology plays a very important role in education and has opened enormous opportunities which could have not been possible in previous times. In modern times both technology and education are intertwined tightly and information and communication technology is of great importance in educational developments. Effective transfer of knowledge takes place with the help of internet and multimedia technologies. For effective classroom discussion which should be retained in student's memory for long time teacher should inculcate all modern technologies in the process of teaching. For this purpose, it is imperative for the teacher to be equipped with latest technologies and their usage.

This paper will explain the importance and integration of technology in the teacher education institution as well as barriers in technology integration.

Introduction

In the age of science and technology a growing revolution is underway throughout the world. A changing world has changing society and hence changing education system. The increased use of technology has influenced the whole system of education including teacher education. Role of teacher has completely changed. The teacher is no longer just transmitter of knowledge but also a planner, manger, programmer, curriculum maker, leader, counselor, artist, scientist, evaluator.. the list is endless. Expectations from teachers have grown multi-faceted.

The teaching is such a demanding profession which requires full dedication towards society. In fact teacher is an ever growing human being who has the responsibility of bringing change in the society. To train teachers, it becomes imperative on the part of teacher education institutes to provide quality education which can help them to grow personally and professionally and also to contribute towards society in many ways. Modern student and teacher in learning have turned into slaves of technology because technology has completely engulfed our life. Present day student prefers to study from Whatsapp University, take advice from Dr.Google and Mr.Youtube and they are inquisitive, aware, critical and technology friendly. Now the major challenge before teacher is to meet the needs of individual learners and at the same time equip her with modern technologies.

Matzen& Edmunds (2007) stated that the technology can help expand students' content knowledge, engross them in constructing their own knowledge, and support the development of complex thinking skills. It is necessary for a teacher to have knowledge about all the latest technologies, which can be used in classroom settings. However, only having the knowledge of technologies is not sufficient. A teacher should be equipped with all the skills required to use these technological tools effectively in varied situations to improve learning outcomes. An Effective teacher magnifies the potential of technology to develop the understanding of the learner, arouse their interests and improve subject proficiency. Integration of Technology in the teacher education programme at both pre-service and in-service level can be used strategically used to provide better access for learning and concept clarification.

Integration of technology means use of technological tools such as computers, mobile devices like smart phones, tablets, digital cameras, social media platforms and networks, software applications, internet etc. In education it means to allow students to apply computer and technological skills in learning and problem solving. Effective integration will only be possible when educational professional is equipped with good

technological skills and should use them in teaching process in such way that it merges with both transformational and transactional process. The vital aim of technology integration in education can be achieved only when students will be able to choose the impeccable technology tool and use them to obtain information in a timely manner to analyze and synthesize the information.

The International Society for Technology in Education (ISTE) has established technology standards for both students and teachers and at the same time for administrators and explained integration of technology as "curriculum integration with the use of technology involves infusion of technology as a tool to enhance learning in a content area. Effective integration can only be achieved when students are able to select technology tools, to help them obtain information in timely manner, analyze and synthesize the information and present it professionally. The technology should become an integral part of how the classroom functions as accessible as all other classroom tools."

Aim of the Study

Aim of the study will be to explain the importance and integration of technology in the teacher education institution and also to understand the barriers in technology integration.

The integration of technology enhances abilities in students to expand their knowledge horizon and at same time can help them to construct new knowledge. In the case of teacher education, it becomes imperative for the curriculum constructors to keep in mind that integration of technology not only help teacher educators to learn new knowledge but at the same time helps in effective transmission of knowledge.

There are various types of technologies currently used in classrooms. Among these are:

Computer in The Classroom

Having a computer in the classroom is strength to any teacher. With a computer in the classroom, teachers are able to present a new lesson with new material, illustrate how to use new programs, and show new information on websites.

Class blogs and Wikipedia

There are a variety of Web tools that are currently being implemented in the classroom teaching. Blogs allow students to maintain dialogues with other academicians and also provide information from journals, thoughts, ideas, and assignments which help students in acquiring knowledge. Wikipedia, an online encyclopedia allows multiple members of the group to edit a single document and create a truly collaborative and carefully edited finished product.

Wireless Classroom Microphones

Noisy classrooms are a daily occurrence, and with the help of microphones, students are able to hear their teachers more clearly. Students learn better when they hear the teacher clearly especially while teaching languages where focus should be on phonetics and pronunciation.

Mobile Devices

Mobile devices such as tablet or smart phone can be used to enrich the experience in the classroom by providing the possibility for professors to get feedback instantly.

Interactive Whiteboards

An interactive whiteboard that provides touch control of computer applications. These enhance the experience in the classroom by showing anything that can be on a computer screen. This not only aids in visual learning, but it is interactive so the students can draw, write, or manipulate images on the interactive whiteboard.

Digital Video-On-Demand

Digital video eliminates the need for in-classroom hardware and allows teachers and students to access video clips immediately by not utilizing the public Internet.

Online Media

Streamed video websites can be utilized to enhance a classroom lesson.

Online Study Tools

Tools that motivate studying by making studying more fun or individualized for the student.

Digital Games

The field of educational games and serious games has been growing significantly over the last few years. The digital games are being provided as tools for the classroom and have a lot of positive feedback including higher motivation for students.

There are many other tools being utilized depending on the local school board and funds available at their disposal.

All these technological tools can be broadly categorized in education as
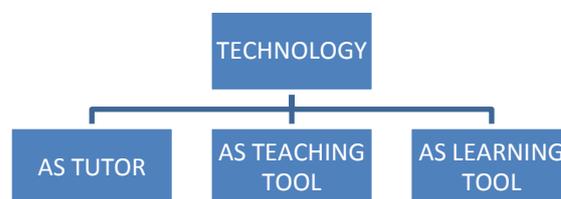
Technology as a Tutor

Computer gives instructions in online mode and guides the user and reduces dependency on a teacher.

Technology as a Teaching Tool

Helps the teacher in teaching process by providing teaching materials.

Technology as a Learning Tool

Helps student to explore various dimensions of technology in acquiring knowledge.

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                    TECHNOLOGY
          ┌─────────────┼─────────────┐
      AS TUTOR    AS TEACHING    AS LEARNING
                     TOOL           TOOL
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Technology in Education is the base upon which a country develops. The Importance of technology within teacher education preparing teachers today requires critical examination of what it means to teach and learn, in increasing networked, technology-rich classrooms.

In India, today there is a proper system of teacher education and the university departments of education with their affiliated colleges, government and government aided institutions; private and self-financing colleges are running teacher education programs. Besides this, open universities are also engaged in teacher education. Quality of teacher education institutes in India is a big challenge because of involvement of many governmental and non-governmental agencies.

To improve the status of teacher education, NCTE framed new curriculum having diverse technological programs with NCFTE-2010. The new teacher education curriculum includes ICT as compulsory subject which enables teacher education program to be technology friendly and to make teachers more technology competent. For pre-service teacher education, the National Council of Teacher Education (NCTE), a statutory body of the Central Government, is responsible for planned and coordinated development, of teacher education in the country. It lays down various norms and standards for various teacher education courses, its curriculum, content, duration and qualification for entry of student teacher for various courses. To increase the knowledge, competencies and proficiencies in student teacher the evolved curriculum involves technology integration at all levels in teaching learning process. But still large number of teacher education institutes doesn't provide proper training to use technology and prepares teachers who are not professionally competent and committed. There is major gap in what they preach and what they practice.

Benefits of Integrating Technology in Teacher Education Programme

There are many benefits of integration of technology in teacher education at both levels-pre service and in service teacher education. Today, the teacher's role is not merely confined to reading books, for conceptual clearance, they might refer to internet technology and so, share the same with their students. For this, educators should be aware and informed about the various technological tools and also about their usage. Use of internet tools can be fun, attractive and pretty exciting.

At the pre service level by integrating technology teacher educator can:
1. Develop an appreciation and an understanding on the potential of technology.
2. Familiarize the student teacher with technology developed for education in recent times.
3. Develop online library and resource materials for teaching.
4. Design integrated curriculum activities for all round developments.
5. Develop competency by using technology through real world and practical experiences.
6. Learn to motivate students to use technology for increasing knowledge base.
7. Learn the benefits of technology in the classroom.eg, - in preparing lectures, creating interest among students, making teaching learning effective etc.

In service teacher education is the professional training where professionals are trained for professional growth. It is the education which a teacher receives after he has entered into the teaching profession. For regular updation of knowledge of teachers, integration of technology serves as base. By giving training in using technology, in in-service teacher education program teachers can:
1. Learn new tools and technological advancements meant for teaching.
2. Solve problems related to daily life of both students and teachers which effect teaching learning process.
3. Help bringing an environment which is more 'learner-centric'.
4. Technology training is beneficial for professional growth, of the teacher.
5. Refresh knowledge, develop a wider outlook, benefit by the experiences of others, acquire new information and hence reorient him.

Successful Integration of Technology in Teacher Education Programme

For effective amalgamation of technology in teacher education teachers should be given knowledge about various technological tools in the curriculum.

Various forms of technological knowledge which are to be included in the programmes are:-
1. Knowledge about basic hardware of computers which includes desktop, printer, calculator, audio recorders, OHP projectors, cameras, mobile phones, tablets.
2. Basic Software Knowledge related to management information systems, administration, teaching, learning, reporting and evaluating.
3. Basic knowledge of internet and web based tools like search engines, meta search engines, anti-virus, email, etc.

Apart from these technological knowledge required for successful integration of technology in teacher education programme, following recommendations are suggested:
1. Teachers should have acceptable access to functioning computers and must be provided with satisfactory technical support.
2. Sufficient time must be given to student educators to develop new skills, explore their integration into their existing teaching practices and curriculum and commence necessary additional lesson planning for ICTs to be used effectively.
3. Teacher education institute should have a demonstration school, which should have certain facilities such as laboratories, resource room, libraries and other important audio-visual equipment for practical knowledge.
4. Provide training to student educators related to technology in subject pedagogy and handling of various tools in a classroom situation.
5. Refresher courses, orientation programs, seminars, conferences and workshops, should be fortified for the professional growth of teacher educators.

Innovation The Research Concept

6. Creating a strong monitoring system whereby all institutions are subjected to a transparent accreditation process for quality assurance, by which services and operations of an educational institution offering teacher education, are evaluated by an external body on specific criteria.

7. Regular and strict inspection by monitoring authorities should be done to guarantee quality in teacher education program.

8. A qualitative resource material should be used by teacher educators, while training the student educator.

9. The teaching practice time period should be strictly monitored by monitoring authorities. For good mentoring of the electronic attendance, should be imitated by the govt.

10. Incentives (like- certifications, professional advancement, pay increases,) must be developed to promote, effective teacher participation, in continuing professional development in in- service level.

Conclusion

The aim of Technology literacy must be to acquaint teachers to a wide variety of ICT resources – hardware, software as well as, digital learning resources. This involves an emphasis on using available free or public digital resources. Technology usage has been started in teacher education institutions but is not of repute standard and there is a long way to cover before reaching the phase of unified and integrated technology based education. The technology skills of the teachers must be refined to make them more competent as this is not only related to their own personal growth but also with their professional growth. Integration of technology in teacher education works as a milestone if properly implemented in the whole education system and at all levels. Technology helps in the professional development of teacher-educators by providing them a rich variety of experiences of advanced technology in the form of ICT which improve their skills of classroom teaching and the level of knowledge as well. But the path of this process of integration is full of barriers which need to be removed successfully by joint effort of educational institutes and student teacher herself.

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