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# Role of ICT in Teacher Education

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***Abstract – ICT is a knowledge handling, implementation and association research, technology, and engineering practice and technology management. ICT is used to treat information and its application. ICT stands for knowledge and communication technology. Information and communication technologies. In the educational environment, ICT is still commonly used. ICTs are popularly used for teachers, educators, managers and everyone interested with education. Teachers use ICT to render learning a quick and fascinating process. A professional teacher has multiple abilities and methods to instruct effectively. The growth and creation of teacher skills and expertise needs ICT and science & technology expertise. In this report, we concentrated on ICT's position in education for teachers.***

***Keywords: Teacher, Education, Technology, Communication, Role***

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## INTRODUCTION

ICT is a knowledge handling, implementation and association research, technology, and engineering practice and technology management. ICT is used to treat information and its application. ICT stands for knowledge and communication technology. Information and communication technologies. In the educational environment, ICT is still commonly used. ICTs are popularly used for teachers, educators, managers and everyone interested with education. Teachers use ICT to render learning a quick and fascinating process. A professional teacher has multiple abilities and methods to instruct effectively. The growth and creation of teacher skills and expertise needs ICT and science & technology expertise. In this report, we concentrated on ICT's position in education for teachers.

## NEEDOF TEACHER EDUCATION

One of the researchers said that Ideal teachers are individuals who make use of themselves as bridges from which their students are called to cross, have therefore made it easy to cross, collapsed with joy and inspired them to build their own bridges.

But only if a teacher will inspire students using innovative inspirational instructional approaches can a teacher become a decent and perfect teacher.

Teaching is one of today's most demanding tasks. It needs a strong comprehension of topic subjects; curricula and standards; passion, a loving approach to learning; experience of discipline, instructional abilities and the will to bring a difference to young people's lives.

For all pupils, excellent teachers set strong standards. Successful teachers have lesson schemes that give students a good picture about what they will understand, what the activities are and how they will graduate. These activities provide students enough opportunity to practice different abilities, and provide learning objectives.

An effective teacher needs a good emotional outlook and empathy. A strong teacher understands his/her students are visual, additive or kinesthetic students and is appropriate for these three presentations.

There is no surprise that teachers will bring an improvement in the life of students with all those characteristics of a strong teacher and a successful teaching method.

Yet teachers may learn these successful teaching skills and become better teachers provided they

undergo the right instruction. This includes the need to train students.

Teacher preparation also applies to policies and practices to empower future teachers with the information, attitudes, actions and expertise they need to successfully fulfill their duties in schools and the broader community.

Teachers will act like a portal from which younger people see their future with 'teacher education'.

## ICT (INFORMATION AND COMMUNICATION TECHNOLOGY)

The term ICTs is a catchy phrase used to define a variety of knowledge acquisition, storage, retrieval, encoding, examination, and transmission technologies. Advancements in ICT have increasingly cut the expense of knowledge technology, making it possible for people and companies, and developments in goods, procedures and corporate systems, to perform information-related activities even more effectively. In order to support the corporate requirements of the enterprise for the capture, preservation, recuperation, transmission, connectivity, analysis and delivery of knowledge, ICT has revolutionized the roles for designing, obtaining, evaluating, installing and sustaining electronic systems. It involves both tech and hardware assessment, procurement, bidding, lease, licensing and disposal.

ICTs are generally believed to be essential future levers to implement and promote attempts to reform schooling. However, whilst proof of growing widespread ICT usage is accessible for political and donor workers directly targeting countries that use ICT to support countries achieve the Millennium Development Goals relevant to education. In this way, there is no advice available.

While there are over 10 years of ICT funding for teaching and learning, the substantive influence on teaching and learning systems and effects of several developed countries are not well established. Yes, really,

1. The implications of ICT on learning performance are uncertain and frequently debated.

2. The effect of ICTs on schooling is not generally agreed by general standard and metrics.

3. The key motivations for encouraging the usage of ICTs in education are to distort the introduction of modern teaching and learning methods and the growth of the know-how of the 21st century (predominantly for use in computer literacy and dissemination of learning materials).

4. In education programs, very little knowledge is available on the costs of ICT, particularly those seeking to measure overall ownership costs and advice on how costs should be calculated

## ICT OF SCHOOL IN TEACHER EDUCATION

In particular in the developed world, education knowledge and communication technology are in the evolving stages. In the design, planning and development of textbooks and other educational materials for schools the basic principle of technology in teaching and learning is expressed. This gigantic challenge was primarily tackled by the National Council of Educational Research and Training (NCERT), New Delhi. In the presentation and usage of instructional aides, the main function of ICT in teaching and learning. Recent changes have been made to the standard of teaching assistance. The spectrum of teaching aids varies from a double diagram to a three-dimensional model. In addition, the advent of electronic media has taken the education help to a third level and movement. Information and communication technology aims to create virtual classroom programs intended to represent the natural environment without the threats, expenses or resources taken for the actual occurrence to be encountered. You provide the customer with constant updates on the state and choices of the case. It's only wise to teach reading in a practical way if learning to read is perceived to be a method. The students are satisfied users because the materials in question are published about their educational standard. Simulations are incredibly motivational since the consumer requires continuous feedback. Simulation enables the learner to be internalized by constant experience and circumstance in existence that literally goes beyond the potential of a textbook, besides being able to engage the learner through the educational method.

Knowledge that revolutionized the method of information processing has been further extended to the advent of technology. Information exchange and interchange including information, thinking capabilities, motor ability and behaviors by the usage of electronics, in particular, in mainstream media. Acceptance as nothing will improve before knowledge is acknowledged and intervention, e.g. improving results or actions. Achievement by contact that consists in obtaining, that is, listening or seeing; acknowledging nothing. Data processors that are a central factor in the production of data in information technology. The abundance of knowledge that is actually distributed across the internet is remarkable in communications technology. Several systems have been set up to enable users to view, send or receive information globally, including World Wide Web (www)

browsers, emails and news groups. Internet browsers such as Netscape and MS Internet Explorer help users who are interested in something to scan, access and show the content. Secondary education retention is all the more relevant, since it is a connection between primary education and secondary education and takes a deciding position in the school system. The secondary education stops here and the students at this stage learn to make choices through adequately different courses such as occupational training, creative training and research. We need a vision at this point to equip our students with the current patterns. In the new high technology and dynamic world, the survival of this group of students can only be dependent on ICT information. All facets of teacher education have been affected. It offers the ability both easily and reliably to store, retrieve and process e-content. ICT is the science and technology discipline concerned with information gathering, storage, distribution to the person or community. ICT mainly covers information collection and correspondence. The planet is turned into a minute global capsule and anybody who wants knowledge will find it just with a finger. ICT is a technology that helps to hold the data, access it if and when appropriate, and saves time, effort, document, money and energy by searching for details. ICT is one of Teacher Education's latest technology solutions. "Informational and Communications Technologies (ICT) is the discipline and administration of knowledge management and information transmission, operation, devices, contact with people and facilities and relevant social, economic and cultural problems." "Information & communications technology (ICT) (UNESCO). "ICT is generally used to access, collect, manipulate and display or communicate information," according to the Researchers, "ICT means that information technologies are used for the production, stockpiling, selection, transformation or distribution of multiple forms of information." Thus, ICT is an embedded concept, which involves any networking equipment or application like radio, television, mobile telephone, server, computer, ICT and satellite networks hardware and software as well as numerous relevant facilities and apps, such as video conferencing and remote learning. The key aim of the application of ICT is to inform. In its World Education Study "Teachers and Teaching in the Changing World," the UNESCO identified ICT's radical effects on traditional teaching-learning problems. The implementation of ICT offers a wide variety of effective resources to help turn the current segregated, teacher-centered and text bound classroom into an abundance in 1998. ICT is now an essential feature of the teacher education program, under the new scenario. For the successful usage of 101' in the teaching-learning phase, the following important requirements must be fulfilled. Students and teachers in their classes, colleges and teacher education institutes should have appropriate links to "Digital Technologies and the Internet." The teachers and learners must also have good quality digital information, relevant and culturally sensitive. Teachers need expertise and skills that enable all students to reach high academic expectations by applying the latest digital tools and services. In education and training, usage of ICT will vary dramatically, primarily in two directions. First of all, the rich knowledge portrayal affects the interpretation and experience of the material by the learner. Second, the extensive dissemination of knowledge and its quick access will alter teaching-student relationships. ICT will help educational technologies powerfully as well. We can resolve any obstacle to connectivity and knowledge by utilizing information technology such as Computers, Smartphones, digital camera, film, blogs, CD-ROMs, DVDs, application of applications such as word-processing, tablets, e-mails, digital databases, electronic media conferencing, videoconferencing, predictions, etc. ICT should be used, independent of regional dispersion, as a method for teacher instruction and assistance. For teachers and educational organizations, the challenge was therefore to develop a new generation of educators that could use a range of innovations and instruments. The wealth of knowledge exchanged across the internet is actually remarkable in communications technologies. Different frameworks were created to allow citizens to analyze, send and get knowledge from the world over via the World Wide Web (www), e-mail and news groups. Web browsers like Netscape and the MS Internet Explorer allow everybody interested in something to scan, access and view content.

## ROLE OF ICT IN 21ST CENTURY'S TEACHER EDUCATION

- ICT offers instruction for teachers both in pre-service training and in-service.
- ICT aids professors with communicating with pupils.
- It lets you plan the classes, gets input.
- ICT also assists teachers accessing NCERT, NAAC NCTE, and UGC colleges and colleges, etc.
- It also allows to allow good use of ICT tools and learning hardware.
- It increases the capacity to educate and encourages creative teaching.
- It helps to make the classroom more successful.
- It aims to strengthen teacher teaching and career growth, and increases teacher learning.

- The obsolete technology is already being updated. As we remember, students have a competitive mind now and then. The teacher would then have the subject matter expertise. This is possible through ICT.
- In training for instruction, ICT supports teachers. Different approaches and techniques are used to implement ICT in pre-service teacher education. Various resources like word processing, database, spreadsheet, etc. are included. Different technology-based plans are being used to support teachers with their practice.
- ICT trains teachers to utilize their expertise in the actual scenario in the school and thus enables students gain potential jobs and social lives.
- For e.g., the ICT is a "assistance tool" used for projects, correspondence, data-collection, and analysis purposes. ICT is typically used separately from the subject.
- ICT as a training and curriculum platform. It is a platform that teaches and learners are willing to use to educate and to understand. It is an instrument. It occurs in several ways in simulations and educational networks, such as instruction and exercise. ICT as a common corporate and administrative management method.
- Teachers need technical support to learn with video, animation and simulation training which enabled teachers to present model models. If the teacher is extremely technologically prepared, the pupil would also be technologically equipped.
- It replaces outdated teaching methods and trains teachers for the introduction of new teaching methods.
- In the student appraisal, ICT plays an important function.
- ICT is the educational institution's shop, and all knowledge regarding education can be stored securely through ICT.
- ICT assists teachers to interact with their pupils accurately. ICT thereby bridges teacher-student differences.
- In a very little period, ICT supports teacher in handing on information to students.
- ICT assists teachers in creating an instructional environment.
- ICT allows teachers in the education institution to recognize innovative students.
- ICT allows teachers to inspire and motivate pupils.
- ICT allows teachers to fulfill organizational standards (vision, policy and culture).
- It also makes teachers appreciate their staff (knowledge, attitude, skills)
- ICT for technical specifications helpful (infrastructure).
- ICT that is helpful in developing learning circumstances that are necessary both for vocational training and for teacher training (in the teacher training institutes).
- Institutes of teacher training will design their curricula using ICT.
- Training institutes will establish contact networks with the aid of ICT teachers
- Teachers benefit the most through their own networks through the help of ICT.

## ICT – THE TEACHERS' TECHNICAL DEVELOPMENT

ICT is one of the most recent technical applications in the area of education and teachers. ICT is the research discipline and technical management methods utilized in the area of knowledge handling and processing; computers and the relationship between men and machines, and social, economic and cultural matters relevant (UNESCO). UNESCO identified the progressive ramifications of ICT in the traditional teaching phase in its World Education Study 'Teachers and Teaching in a Changeable World in 1998. Today, ICT is a significant and fundamental component of the teacher education program. By utilizing ICT technologies such as computers, smart phones, digital images, photographs, internet, online pages, CD-ROMs, DVDs, software application, e-mails, machine mediation conferences, video conferencing, projectors etc. Both contact and guidance challenges can be solved. ICT should be used, independent of regional dispersion, as a method for teacher instruction and assistance. The challenge has been to build up a new generation of students, who can use a broad spectrum of technologies and instruments in all phases of academic, managerial, research and growth. For the educational advancement of students, ICT is highly helpful and supports teachers as follows:

1. Mixed productivity has been shown by the usage of ICTs as display tools

(through overhead and LCD projectors, TV, electronic white boards, guided "web-tours" where students see the same opportunities concurrently on computer screen). While it can facilitate the comprehension and discussion of complicated topics by classes (especially by presenting simulations), ICT uses may perpetuate conventional pedagogic practice and detract from the substance of the method being used.

2. In the OECD experience, the usage of technology tends to be more critical in daily teaching and learning than formal training in 'computer courses.' While technological advances play a role in the teaching and learning phase, this is more important than ever as an enabler for other teaching and learning activities. Schools with the highest rate of ICT-related qualifications and expertise of students mostly aren't those with strong computer needs, but instead schools utilizing ICT on a regular basis in the curriculum and educational growth phase.

3. Enhanced preparation and career growth needs by the teachers, the successful application of ICTs in schooling. ICTs may nevertheless be valuable instruments to promote this increase by having links to more and better instructional material, supporting routine administrative activities, modeling successful teaching strategies and enabling learner support networks, both in face-to-face and distance learning settings, and in real-time or asynchronous fashion.

4. Successful career learning of teachers can put the classroom as close as possible to the community. Hands-on training on the usage of ICTs is needed if ICTs are considered important elements of the teaching and learning phase. In addition, career learning can model and promote and encourage the participation of teachers in modelling successful activities and behaviors. Continuous professional development at school level by ICT facilities is seen as a key driver for progress, especially in the form of tools and expertise specifically linked to daily needs and practices of teachers.

5. ICT enriches education by offering quality instructional and preparation tools, simulators and processes for documentation and input.

6. The boundaries between the teacher and the learner have been eliminated by ICT.

7. It has created an engaging, healthy partnership between teachers, colleges, universities and organizations and has encouraged teachers to develop comprehensive expertise in cyberspace.

8. Study agreement in the OECD countries (Organization for Economic Cooperation and Development) notes that teachers, assisted by IKTs, question comprehension or thought among pupils by participating in full-scale debates or collaborating with individuals or small groups utilizing ICTs are the most successful uses of ICT. ICT are considered to be critical instruments that make the transition to more "learner focused" approaches from conventional 'teacher-centered' teaching styles.

9. Teachers utilizing ICTs should extend their pedagogical strategies only to minor developments in teaching procedures, using mostly conventional approaches, and to modifications in their processes. The usage of ICTs will improve current educational methods as well as shift the relationship between teachers and students.

10. Learner preparation expenses have been minimized for teacher applications and smart tutoring programs.

11. ICT offers lifetime job growth through on-line and video conferencing classes, on-demand preparation, concentrating and refresher training.

12. The ICT will revolutionize the entire teaching field through exchanging materials across interactive communities, sharing ideas and perspectives and partnering on projects.

## APPROACHES TO ICT INTEGRATION IN TECHER EDUCATION

In multiple forms of differing degrees of effectiveness, the usage of ICT in teacher training courses around the globe is tackled. The following methods were accompanied by: -

### Approach for improving ICT skills

The provision of ICT instruction in general is of particular significance here. Teachers of students can be professional ICT consumers for their everyday jobs. Awareness of different technologies, hardware and the usage of them in education is given.

### Approach to ICT pedagogy

ICT expertise must be incorporated within a given subject. Centered on constructionism concepts,

teachers at pre-service design lessons and exercises that concentrate on the application of ICT skills in a specific topic. Centered on the constructivism principles, pre-service teachers create lectures and practices focusing on the application of ICT resources to promote learning performance. This method is beneficial in that the opportunity to increase ICT literature and pedagogy helps students in the sense of designing classroom-based tools, to better build and preserve certain skills.

**Subject Specific Approach**

Here ICT is built into your own sector. This approach not only opens teachers/teachers to fresh and creative forms of studying, but gives them a practical interpretation of what ICT-based teaching and learning looks like and sounds. ICT is not a "add-on" but an indispensable method, which teachers and students test in a number of curriculums.

**Practice driven approach**

The emphases here are on the exposure to teacher preparation to the use of ICT. The emphasis is on education and teaching. With the use of ICTs and their job experience at different stages, students may compare the facilities available in their school and use their expertise effectively.

## CONCLUSION

Teaching has an honorable role in culture. ICT lets the teacher upgrade the latest knowledge, know-how and resources of the new interactive technologies. By utilizing and learning information and communication abilities, student teachers become successful teachers. In order to produce swift improvements in our culture, ICT is one of the main considerations. The essence and responsibilities of students and teachers in the learning phase may be modified. Teachers in India have already been utilizing classroom equipment. The common media for teaching institutions are being Tablets, LCD projectors, desktops, EDUCOM, smart classrooms, memory clubs.

In the 21st century, thus, teacher education can utilize knowledge and communication technologies, so now teachers will build a promising future just for students.

## REFERENCES


1. Kishan, N.R. (2010). Global Trends in Teacher Edcuation. New Delhi: APH Publishing corporation.

2. Rao, V.K. (2007). Teacher Education. New Delhi; APH Publication Corporation.

3. Sharma, R.A. (1989). Teacher Education theory, Practice and research. Meerut: Loyal Book Depot.

4. Singh. Y.K. (2005). Teacher Education New Delhi: Kulbushannagia APH publishing

5. Amareswaran and Singh S.P. (2011). “Teacher Education through Open and Distance Learning--Information and Communication Technology Based Pedagogy Integration.” TechnoLEARN: an International Journal of Educational Technology 1.1

6. Dangwal, K.L., and Singh S.P. (2012). “Enhancing Spiritualism in Virtual World.” Turkish Online Journal of Distance Education 13(2): 76-83.

7. Padhan, A., and Singh, S. P. (2010). Culminating Professional Ethics to Reduce ZPD Gaps in Teacher Education. Learning Community: An International Journal of Education and Social Development

8. Mirja, S., and Singh, S. P. (2014). Effectiveness of Student Support Services Provided by Indira Gandhi National Open University (IGNOU). Mediterranean Journal of Social Sciences, 5(26): 124

9. Farrukh, S., and Singh, S. P. (2014). Teachers Attitude towards Use of ICT in Technical and Non-Technical Institutes. Journal of Educational and Social Research, 4(7): 153.

10. Singh, S. P., and Dangwal, K. (2011). Innovative Practices in Education. New Delhi Publishers



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