

Effective Use of ICT in Teacher Education for Inclusive Environment in Classroom

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ABSTRACT

The increasing awareness and growing emphasis on making “Education for all” a realizable dream has made the classrooms of twentieth century necessarily inclusive in nature where an attempt is made to teach the children with different abilities and varied cultural, economic and family backgrounds under the same roof and with equal access to facilities and opportunities. To address to such diversity in an equitable manner, technology is undisputedly playing a significant role. It is making the teachers equipped to handle day to day classroom situations in a better way through ICT tools and devices that have built and provided platforms to remove barriers (physical, technical, cultural, psychological etc.) to facilitate complete development of children. With technological advancements and increasing use of various digital resources, the various aspects of education such as teaching, learning, evaluation and feedback becomes far easier and quicker as compared to the traditional approaches. With the advent of specialized tools for the disabled or children with special needs as well as a wide range of apps and softwares, the services reach uninterruptedly to various strata of the society with ease. The current paper reflects on the integration of various technological tools and approaches in our classrooms for a more inclusive environment so that a teacher can cater to individual educational needs of children. The potential of ICT in providing access for all learners including the ones with special needs and ability to access the general education curriculum is being discussed in this paper. The objective of the paper is to make the teachers aware about how amalgamation of ICT can be done in classroom learning for better addressing of the problems of the students for them to overcome their inabilities.

Keywords: Teacher Education, Inclusive environment, Special needs, ICT.

ICT or Information and Communication Technologies are technological tools and resources used to communicate, and to create, disseminate, store, and manage information. These technologies include Computers, the Internet, broadcasting technologies (radio and television), telephone, mobile phones and other latest gadgets. ICT can be defined as sum total of hardware and software resources specifically used for sharing, storing, generating information by making use of various means of technology available. It is different from e-learning which is a process that involves the application of these ICT tools to enhance teaching learning process. Hence, we can say that ICT is a

very useful tool for education and has the potential to benefit learners at any stage immensely. Several researches have been conducted in the last decade specifically to show the importance and utilities of ICT in education and research. It also throws light on how to use these for producing more efficient learning.

Now moving towards the concept of efficient teaching, we know the fact that efficient teaching is directly related with efficient learning and calls for a democratic and an inclusive environment where all learners learn together and more or less acquire those levels or standards of learning without much difference. India is a land of diversity. Culture,

economy, language, society and even emotional criteria is different in different places of India and these diversities are clearly reflected in classrooms as well. Thus, a teacher in Indian classroom specially needs to be aware of the ways to deal and cater to these differences in classrooms and carries the responsibility of removing the various forms of emotional, cultural, language, social, and for economic barriers of learning with a purpose to realize inclusion in its true nature. Now let us see the concept of inclusive education in detail:

The concept of Inclusive Education

Inclusive education is a relatively controversial topic for many parents and educators. The idea behind inclusive education is that students with special needs will be placed in the same classroom environment as other students their age who do not have special needs.

Within inclusive education, there are two main branches of thinking: mainstreaming and full inclusion.

Mainstreaming is a process that allows children with special needs to enter certain standard classrooms after they show the ability to keep up with the rest of their peers.

Full inclusion puts students with special needs in standard classroom environments without testing or demonstration of skills. Individuals that support full inclusion believe that all children belong in the same classroom environment no matter what.

Why Is Inclusion Important?

While feelings about inclusive education are still somewhat mixed, many studies show that children with special needs thrive in standard classroom environments for a variety of different reasons.

On an interpersonal level, inclusive education allows children to develop friendships with their peers and feel less social tension about their disabilities. Some people believe that children who are placed in standard classroom environments generally have higher self-esteem than children who are isolated to different classrooms simply because they have special needs.

Other studies show that children with special needs actually learn more in regular classroom environments, provided they get the help and

support they need in and out of the classroom when it comes to academic subjects. Groups that oppose inclusive education often maintain the position that children without special need will be forced to learn at a slower pace, but in practice, this is easily avoided by qualified teachers.

Children want to be included: The need to feel included or to belong to a group is strong in most children. Children that are relegated to special classes or schools because they have special needs may develop self-esteem and image issues that could stay with them the rest of their life, making it difficult for them to feel like they belong as adults.

Unfortunately, that can lead to lifelong interpersonal problems, and problems related to employment and daily life.

Many national educational systems struggle to provide a quality education in mainstream schools and favour the development of special needs schools. Inherent in inclusive education is the notion that reform and improvements should not only focus on children with disabilities but on “whole school improvement in order to remove barriers that prevent learning for all students”. Inclusive schools can “accommodate all children regardless of their physical, intellectual, emotional, social, linguistic or other conditions.” However, inclusive education is not a synonym for special needs education or integration techniques but an “an on-going process in an ever-evolving education system, focusing on those currently excluded from accessing education, as well as those who are in school but not learning.

UNESCO advocates that where possible, children with disabilities are accommodated in inclusive schools, which it promotes as being more cost-effective and which lead to a more inclusive society. Accessible ICTs are one of many supports that can enable the realization and implementation of inclusive education.

Groups of People Supported by Inclusion

The major impetus for inclusive education came from the 1994 World Conference on Special Needs Education in Salamanca. Inclusion is concerned with the learning, participation, and equal opportunities for all children, youth, and adults with a specific focus on the groups vulnerable to marginalization and exclusion from society life. It could apply to any or all of the following:

- Girls and boys who have gender issues.
- Ethnic and faith minority groups, travellers, asylum seekers and refugees.
- Children who need support in learning the language of instruction.'
- Children with special educational needs including those considered to have emotional, behavioural, sensory, physical or mental disabilities.
- Gifted and talented pupils.
- Children with social difficulties such as street children, prison inmates.
- People in disadvantaged remote areas, poorly served by educational services.
- People who missed the opportunity to study in childhood.
- Children in need include those in public care and orphanages.
- Any pupils at risk of disaffection and exclusion.

These groups are usually excluded from the mainstream education. Therefore, education for them requires special approaches and techniques.

ICT and Teacher Education for Inclusive approach to Learning

ICT can prove to be a useful tool for the teachers to aid in this regard and hence, they should be aware of the potentialities, uses, feasibility and effectiveness of ICT resources and their applications in education. ICT cannot only make learning fun and interactive, but also help in making it more accessible. It makes education cost and time effective. The need of the hour is therefore to connect teacher education with ICT training and orientation, as teacher education is responsible for preparing and continuously developing teachers for this profession.

Teacher education through means of both pre-service and in-service teacher development programs can help facilitate ICT expertise in teachers and train them to use ICT in classrooms. Teacher education is the main platform which can bring about the actual dissemination of ideas related with integration of ICT in classrooms, keeping the teacher at the center position. Acquisition of technical skills and required expertise and knowledge can be best spread through teacher education programs.

Scope of ICT in bringing inclusion in classrooms

A teacher must thrive to bring inclusion inside the classrooms as he is the one who directly deals with the diversities inside classrooms. In attempt to attain this goal, ICT should be adopted in the teacher education programs. This can be done to meet the following purposes:

- For imparting basic skills of computers.
- For enhancing communication in learning.
- For fostering self-learning.
- For helping the working teachers to update their knowledge base with respect to trending and new technologies from time to time.
- For removing communication, cultural and geographical barriers.
- For assisting and enhancing the evaluation, assessment and feedback mechanism.
- To foster cooperative learning and team teaching by collaborating teachers together.
- For making interactive phase of teaching more interesting.
- For aiding teachers in their pre-active phase of teaching.
- For providing accessibility in distance learning.

ICT for Inclusion

1. At individual level
2. At Institutional/systemic level

ICT at individual level

- Assistive technology (AT)** is any item, piece of equipment, service or product system whether acquired commercially on the shelf, modified or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities.
- It can be a very complex and multifaceted field, yet in some cases be a relatively easy and creative problem solving process.
- Includes a range of technologies, which enable people to build on their abilities and participate as fully as possible at home, school, work and in their community.
- Assistive devices

- Content Delivery Systems
- Content generation & archiving
- Education
- Braille. Pictorial communication. Large Print. Personalized environment
- Rehabilitation/Inclusion
- Physiotherapy, Beauty care, Call center/office jobs, Bank, Court etc.
- Communication
- Voice commands, Descriptors, Large Print

Some Gadgets available

Visual Impairment

- Braille shorthand machine
- Distance vision telescopes
- Hand held magnifiers
- KNFB portable reader for blind people
- Talking dictionary
- Smart Cane

Speech Impairment

- Delayed Auditory Feedback (DAF)

Hearing Impairment

- Advanced Digital Speech Audiometer
- Hearing Aid
- Wireless FM Assistive Listening System

Locomotor Impairment

- Battery Powered Joystick Operated Wheelchair
- Aluminum Crutches
- Ankle Brace for ankle support
- Prosthetic limbs
- Cervical Immobilizer
- Child model tricycle
- Folding sticks and folding walkers

Mental Retardation

- Basic Skill Wooden Puzzles
- We can (daily living activities)
- Calendar of seasons
- Punnarjani

Cerebral Palsy

- Sanyog
- Gupshup
- Switches

ICT – at systemic / Institutional level

- Any tool or service that is helpful in advancing student learning.
- An evidence-based applied science derived from basic educational and psychological research enhances capabilities of exploring ideas, innovations and communication.

AT for Inclusion

Examples of some AT to help PWDs in education includes:

- Braille Duplicators and Writers
- Group Hearing Aid for classrooms
- Alternative & Augmentative Communication software/devices
- Multi-Sensory systems
- Tactile mathematical devices
- Tactile geography devices
- Tactile science devices
- Screen readers & magnifiers
- Assessment & evaluation tool
- Models
- Multimedia Content
- Content Development Software
- Word Bank & Prediction Systems
- Text-to-Speech Engines & Speech Recognition
- Special Access Switches & Mechanism
- Sign Language & Braille Learning Software etc.
- Web-Portal
- Edusat
- M-Learning
- Web-cast
- Online learning
- On demand examination

Benefits of ICT

Some of the claimed benefits of ICT for Education are:

- ❑ Easy-to-access Course Material – Multimedia/easy to understand course material can be posted on web which learners can access at a time and location they prefer
- ❑ Motivation - Computer-based instruction can give instant feedback to students and explain correct answers. Moreover, a computer is patient and non-judgmental, which can give the student motivation to continue learning
- ❑ Wide Participation - Learning material can be used for long distance learning and are accessible to a wider audience
- ❑ Improved student writing - Convenient for students to edit their written work which can, in turn, improve the quality of their writing
- ❑ Subjects made easier to learn - Many different types of educational software are designed and developed to help users to learn specific subjects/topics easily
- ❑ More amenable structure to measure and improve outcomes. With proper structuring it can become easier to monitor and maintain student work while also quickly gauging modifications to the instruction necessary to enhance student learning

Suggested measures to promote ICT among persons with disabilities

- ❑ Information to be provided in dual communication mode for the benefit of persons with disabilities.
- ❑ Assistive devices to be adapted for improving access to technology.
- ❑ Indigenous production of devices to be taken up to increase the affordability by persons with disabilities.
- ❑ The existing curriculum for persons with disability to be expanded to include information technology inputs.

- ❑ Open learning system to be encouraged to offer information technology oriented courses for persons with disabilities.
- ❑ Some IT related jobs in public and private sectors to be earmarked for persons with disabilities.
- ❑ In order to promote information technology among persons with disabilities, the organizations working for them should also inculcate the IT culture in their activities.

CONCLUSION

The present paper has attempted to throw light on the need and importance of training teachers in using ICT in teaching and learning with a view to help in achieving the goals of much emphasized concept of inclusion. It is imperative for a teacher to have the necessary knowledge and skills required for removal of common learning barriers that arise due to the individual differences of cultural, social, physical, psychological and economic nature in classrooms and to ensure that the classroom is truly inclusive in nature. The paper has attempted to acquaint the teacher educators with the tools of ICT along with their benefits and applications in Indian classrooms so that they train the pre-service teachers and in-service teachers to use them and apply for effective learning of students.

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