

## Role of Information and Communication Technology (ICT) for Inclusive Education for the Disabled

K. Lalitha<sup>1\*</sup>, Lucas Naveen<sup>2</sup>

### ABSTRACT

Information and Communication Technology, known as ICT has the highest impact on the present day society for sharing of information via communication. ICT used includes the Internet, social communication and media websites, virtual learning sites, etc., The usage of ICT in enhancing the performance of students in Education has revolutionized the way of teaching through the usage of e-classrooms, and virtual libraries etc., Disability refers to restrictions or prevention of carrying out an activity because of impairment in the manner or within the range considered normal for a human being. The present article focuses on the role of ICT and how it improves the quality of life of a person with disability providing access to information and knowledge, new employment, and socialization opportunities. It also emphasizes the measures taken by the Government to use ICT as a tool for inclusive education.

**Keywords:** *Information and Communication Technology (ICT), Inclusive Education*

### ICT USAGE IN TODAY'S WORLD

Today is the era of the modern age. The whole world is on the way of progress. The basis of the country's development and advancement depends on the educational system and techniques. ICT is a diverse set of 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), and telephony". In recent years there has been a groundswell of interest in how computers and the Internet and best be harnessed to improve the effectiveness of education at all levels and in both formal and non-formal settings. "But ICTs are more than just these technologies; older technologies such as the telephone, radio, and television, although now given less attention, have a longer and richer history as instructional tools". For instance, radio and television have for over forty years been used for open and distance learning, although print remains the cheapest, most accessible and therefore most dominant delivery mechanism in both developed and developing countries.

In spite of enormously increasing applications for ICT in contemporary society, several studies indicate that people vary greatly about their level and use of ICT. Various reasons

<sup>1</sup>Associate Professor, Department of Psychology, Y.V. University, KADAPA

<sup>2</sup>Research Scholar, Department of Psychology, Y.V. University, KADAPA

\*Corresponding Author

Received: March 12, 2024; Revision Received: June 27, 2024; Accepted: June 30, 2024

## The Rise of Neo-Fascism in Today's World: A Qualitative Analysis

have been proposed to explain such differences, like gender, age, education, access, family culture, computer anxiety computer usefulness, locale difference, etc. (Lee 2008, 2010; Wand et al., 2009; Hargittai, 2010). According to Khan (2015) ICT enhanced teaching is based on different conceptions including gaining access to information and resources, as a delivery tool, to prepare students for their future profession, as a media for active learning, and to meet external expectations. However, ICT is not limited to only web 2.0, automation, and knowledge-based systems but ICT is the best way to gain a sustainable competitive advantage so far as education is concerned. However, researchers and academicians are skeptical about the fact that ICT has enormously enhanced the profession of a teacher by enhancing positive elements and reducing negative ones like; Competency, Motivation, Access to knowledge & Work Stress.

In the modern era ICT is becoming part and parcel of the educational system, ICT has not only become a medium of teaching and learning but also a supplementary instrument for preparing documentation, and assignments, collecting data, communicating, and conducting research (Khan 2012). Restructuring of the education system is highlighted by the technology integration in every aspect of education. Knowledge regarding ICT motivated teachers to improve their knowledge and skills. ICT integration into educational practices is familiarized due to reasons as it provides avenues of skill development, and plays a significant role in constructive transformation of curriculum & pedagogical practices (Fitzallen, 2005). ICT plays a role of vital instrument used for understanding the concept of various subjects, like science, mathematics, and so on (Rodrigue set al., 2003).

ICT (information and communications technology – or technologies) is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning. “ICT s are often spoken of in a particular contest, such as ICTs in education, health care, or libraries” (Abe & Adu, 2007).

Angeli, & Valanides, (2009) revealed that the introduction of ICT as an important element of technological pedagogical content knowledge (TPCK) helps in understanding the knowledge regarding teaching content, pedagogy, and synthesizing context of how various topics which are challenging to presented for teachers and difficult to be technology, similarly ICT integration shows a positive effect on teachers professionalism (Oner, & Nilay, 2012). The potential of web pages enhances educational requirements like exploring constructive knowledge and information, sustenance and nurture of active learning, improving interconnectivity among various information resources, and enhancing learning in an innovative atmosphere (Kubricky & Castkova, 2015).

### **INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN INDIA**

In the past two decades, a tremendous growth of ICT (Information and Communication Technology) and ITeS (IT enable Services) industry worldwide and India has an impressive mark in the world trade of ICT and ITeS. Information and Communication Technology (ICT) is an effective tool in catalyzing economic activity in efficient Governance and in developing human resources. The applications of ICT technologies used to promote e-Governance for empowering citizens, promoting the inclusive and sustainable growth of Electronics, IT (Information Technology) & ITeS industries, enhancing India's role in Internet Governance, promoting R&D (Research and Development) and innovation, enhancing efficiency through digital services and ensuring a secure cyberspace.

### ***ICT in Education***

In the modern era ICT is becoming part and parcel of the educational system, ICT has not only become a medium of teaching and learning but also a supplementary instrument for preparing documentation, and assignments, collecting data, communicating, and conducting research (Khan 2012). Restructuring of the education system is highlighted by the technology integration in each aspect of education. Knowledge regarding ICT motivated teachers to improve their knowledge and skills. ICT integration into educational practices is familiarized due to reasons as it provides avenues of skill development, and plays a significant role in the constructive transformation of curriculum & pedagogical practices (Fitzallen, 2005). ICT plays a role of vital instrument used for understanding the concept of various subjects, like science, mathematics, and so on. Angeli, & Valanides, (2009)., Rodrigue et al., (2003). revealed that the introduction of ICT as an important element of Technological Pedagogical Content Knowledge (TPCK) helps in understanding the knowledge regarding teaching content, pedagogy, and synthesizing context of how various topics which are challenging to be presented for teachers and difficult to technology, similarly ICT integration shows a positive effect on teachers professionalism (Oner, & Nilay, 2012). The potential of web pages enhances educational requirements like exploring constructive knowledge and information, sustenance and nurture of active learning, improving interconnectivity among various information resources, and enhancing learning in an innovative atmosphere (Kubricky & Castkova, 2015). e-vigyanshala-Virtual labs for life science, Ganitmitra- Maths preparation guide, Shikshan- Intelligent tutoring system, Balshiksha- Multimedia based primary teachers resource kit. etc. these are the programs by Media Lab Asia Organization set up by the Department of Electronics and Information Technology, Ministry of Communication &IT, Government of India.

### ***ICT for Person with Disabilities***

ICT improves the quality of life of people with disability providing access to information and knowledge, new employment, and socialization opportunities. Computer and Information Technologies have re-designed the way modern society operates. In particular, they have identified new avenues to assist individuals with special needs and provide tools and resources to alleviate the traditional barriers encountered by Persons with Disabilities. For example, Voice recognition has helped people with motor impairments, and speech generation systems have assisted persons with visual impairments and blindness. Multi-model presentations are effective in helping people with learning disabilities (Chandra Sekharaiah, & Ramesh Babu, 2011).

### ***Children with disabilities have a right to education.***

Since the UN Universal Declaration on Human Rights was released in 1948, there has been legislation on providing education for all children. The UN Convention on the Rights of Persons with Disabilities (CRPD ,2006) given specific articles encapsulates the essential purpose of using ICT in education for people with disabilities – the use of ICT is not an end in itself; rather it is a means of supporting individual people's learning opportunities. There are eight guiding principles by UN Convention which show equal opportunities with that of normal people.

1. Equality of opportunity
2. Full and effective participation and inclusion in society.
3. Non-discrimination
4. Respect for difference and acceptance of persons with disabilities as part of human diversity and humanity.
5. Accessibility.

## The Rise of Neo-Fascism in Today's World: A Qualitative Analysis

6. Equality between men and women.
7. Respect for the evolving capacities of children with disabilities and respect for the right of children with disabilities to preserve their identities.
8. Respect for inherent dignity, individual autonomy including the freedom to make one's own choices, and independence of persons.

### **What are the barriers to educating children with disabilities?**

Perceived barriers to educating children with disabilities may be physical, social or financial. Some barriers identified by A RESULTS UK survey, Unicef and The Atlas Alliance include the following:

#### **Common barriers faced by Persons with disabilities:**

Nearly everyone faces hardships and difficulties at one time or another. But for people with disabilities, barriers can be more frequent and have a greater impact. The World Health Organization (WHO) describes barriers as being more than just physical obstacles. Here is the WHO definition of barriers:

Factors in a person's environment that, through their absence or presence, limit functioning and create disability. These include aspects such as:

- a physical environment that is not accessible,
- lack of relevant assistive technology (assistive, adaptive, and rehabilitative devices),
- negative attitudes of people towards disability,
- services, systems and policies that are either nonexistent or that hinder the involvement of all people with a health condition in all areas of life.

Often multiple barriers can make it extremely difficult or even impossible for people with disabilities to function. Here are the seven most common barriers. Often, more than one barrier occurs at a time.

#### ***Attitudinal barriers***

Attitudinal barriers are the most basic and contribute to other barriers. For example, some people may not be aware that difficulties in getting to or into a place can limit a person with a disability from participating in everyday life and common daily activities. Examples of attitudinal barriers include:

- **Stereotyping:** People sometimes stereotype those with disabilities, assuming their quality of life is poor or that they are unhealthy because of their impairments.
- **Stigma, prejudice, and discrimination:** Within society, these attitudes may come from people's ideas related to disability—People may see disability as a personal tragedy, as something that needs to be cured or prevented, as a punishment for wrongdoing, or as an indication of the lack of ability to behave as expected in society.

Today, society's understanding of disability is improving as we recognize "disability" as what occurs when a person's functional needs are not addressed in his or her physical and social environment. By not considering disability a personal deficit or shortcoming, and instead thinking of it as a social responsibility in which all people can be supported to live independent and full lives, it becomes easier to recognize and address challenges that all people—including those with disabilities—experience.

**Communication Barriers:** Communication barriers are experienced by people who have disabilities that affect hearing, speaking, reading, writing, and or understanding, and who use

## The Rise of Neo-Fascism in Today's World: A Qualitative Analysis

different ways to communicate than people who do not have these disabilities. Examples of communication barriers include:

- Written health promotion messages with barriers that prevent people with vision impairments from receiving the message. These include
  - Use of small-print or no large-print versions of the material, and
  - No Braille or versions for people who use screen readers.
- Auditory health messages may be inaccessible to people with hearing impairments, including
  - Videos that do not include captioning, and
  - Oral communications without accompanying manual interpretation (such as, American Sign Language).
- The use of technical language, long sentences, and words with many syllables may be significant barriers to understanding for people with cognitive impairments.

**Physical barriers:** Physical barriers are structural obstacles in natural or manmade environments that prevent or block mobility (moving around in the environment) or access. Examples of physical barriers include:

- Steps and curbs that block a person with mobility impairment from entering a building or using a sidewalk;
- Mammography equipment that requires a woman with mobility impairment to stand; and
- Absence of a weight scale that accommodates wheelchairs or others who have difficulty stepping up.

**Policy Barriers:** Policy barriers are frequently related to a lack of awareness or enforcement of existing laws and regulations that require programs and activities be accessible to people with disabilities.<sup>2</sup> Examples of policy barriers include:

- Denying qualified individuals with disabilities the opportunity to participate in or benefit from federally funded programs, services, or other benefits;
- Denying individuals with disabilities access to programs, services, benefits, or opportunities to participate as a result of physical barriers; and
- Denying reasonable accommodations to qualified individuals with disabilities, so they can perform the essential functions of the job for which they have applied or have been hired to perform.

**Programmatic Barriers:** Programmatic barriers limit the effective delivery of a public health or healthcare program for people with different types of impairments. Examples of programmatic barriers include Inconvenient scheduling; Lack of accessible equipment (such as mammography screening equipment); Insufficient time set aside for medical examination and procedures; Little or no communication with patients or participants; and Provider's attitudes, knowledge, and understanding of the people with disabilities.

**Social Barriers:** Social barriers are related to the conditions in which people are born, grow, live, learn, work, and age – or social determinants of health – that can contribute to decreased functioning among people with disabilities.

### BENEFITS OF ICT INCLUSION

Some of the claimed benefits of ICT for Inclusive Education are:

1. Easy-to-access Course Material–Multimedia/easy-to-understand course material can be posted on the web which learners can access at a time and location they prefer.

## **The Rise of Neo-Fascism in Today's World: A Qualitative Analysis**

2. 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.
3. Wide Participation -Learning materials can be used for long-distance learning and are accessible to a wider audience.
4. Improved student writing -Convenient for students to edit their written work which can, in turn, improve the quality of their writing.
5. Subjects made easier to learn -Many different types of educational software are designed and developed to help users to learn specific subjects/topics easily.
6. 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.

### ***Supporting Inclusive Education Through ICT Implementation***

Inclusive education means that all students attend and are welcomed by their neighborhood schools in age-appropriate, regular classes and are supported to learn, contribute and participate in all aspects of the life of the school.

Inclusive education is about how we develop and design our schools, classrooms, programs and activities so that all students learn and participate together.

ICT support in inclusive education is important because it covers issues that apply to a spectrum of potential learning needs. Inclusive education presents an opportunity for students with special needs to attend mainstream classrooms with their age-group peers. To realize this we need to provide for the relevant conditions of overcoming the barriers to the learning process. Particularly speaking, these conditions are attained via the facilitation of ICT infrastructure for SNE, integration of ICTs into SNE curriculum and training of ICT specialists in SNE. Promoting ICT infrastructure for SNE is necessary in order to provide for the appropriate conditions of teaching and learning in the SNE context. The conditions in every type of inclusive educational area cannot be successfully created without the appropriate ICT tools applied. Assistive tools must be used to allow students with SEN to participate in the educational process based on special techniques and equipment.

### ***Government measures in inclusion of education in India:***

India has some forty to eighty million people living with disability among them thirty percent of them are children below the age of fourteen years. The Department of Electronics and Information Technology of Indian Government taking care of differently able children in their education giving various ICT services, to tie up with Government Organizations and NGO's (Non Government Organization). As per Census of India 2011 data on disability there are total 26,810,557 crore persons were present Males 14,986,202 crores, females 11,824,355 crores. Disability occupies 2.21 % percent of the total population in India 2011.

### ***Policies and practices concerning the education of children with disabilities:***

The Constitution of India and the educational policies envisaged in post-independent India reflect perseverance and commitment to the fulfillment of UEE. The Constitution states that 'free and compulsory education should be provided for all children until they complete the age of 14 years'. The first education commission in India (Kothari Commission, 1964–66) addressed issues of access and participation by all. It stressed a common school system open to all children irrespective of caste, creed, community, religion, economic condition, and social status. In 1968, the National Education Policy followed the commission's

recommendations and suggested the expansion of educational facilities for physically and mentally handicapped children and the development of an 'integrated programme' enabling handicapped children to study in regular schools. Two decades later, the National Policy on Education (NPE) (1986) stressed the 'removal of disparities' in education, while attending to the specific needs of those who had been denied equality so far (MHRD, 1986). It stated 'The objective should be to integrate the physically and mentally handicapped with the general community as equal partners, to prepare them for normal growth, and to enable them to face life with courage and confidence.' In 1987, to fulfill the provisions for disabled children in the NPE, the government launched the Project for Integrated Education Development (PIED). It states 'wherever feasible, the education of children with motor handicaps and other mild handicaps will be in common with that of others.' According to the NPE, 'the indicators of integration are that handicapped people enjoy the same rights as the rest; have opportunities for growth and development in environmental conditions available to the rest; have access to the quality of life like any other citizen; and are treated as equal partners in the community.' The programme of action outlined measures to implement the policy including massive inservice training programmes for teachers; an orientation programme for administrators; the development of supervisory expertise in resource institutions for school education at the district and block level; and the provision of incentives such as supply of aids, appliances, textbooks and school uniforms. The NPE underwent modifications in 1992 (MHRD, 1992). It made an ambitious commitment to universal enrolment by the end of the Ninth Five-Year Plan for both categories of disabled children: those who could be educated in general primary school, and those who needed to be educated in special schools or special classes in general schools. It also called for the reorientation of pre-service and in-service teacher education programs. The NPE (1986) and revised NPE (1992) are the guiding policies at all levels.

### ***Early childhood care and education***

It is now globally recognized that systematic provision of early childhood care and education (ECCE) can help in the development of children in a variety of ways, such as through group socialization, inculcation of healthy habits, stimulation of creative learning processes, and enhanced scope for overall personality development. ECCE is a support for UEE, and indirectly influences enrolment and retention of girls in primary schools by providing substitute care facilities for younger siblings. At present, the Integrated.

### ***Project for Integrated Education Development (PIED) and Integrated Education for the Disabled Children (IEDC)***

The government launched the Project for Integrated Education Development (PIED) with assistance from UNICEF in 1986. The implementation of PIED in 10 demonstration sites in rural and urban contexts encouraged policy-makers to include children with moderate disabilities in 1992. In practice, children with multiple and severe disabilities were also integrated in project areas as a consequence of the lack of special schools, and through the commitment to providing education for all that was generated in these areas. Evaluation of PIED showed higher retention rates of children with disabilities and a positive change in teacher practices.

### ***District Primary Education Project (DPEP)***

The government launched the DPEP with support from the World Bank. DPEP is converging with IEDC and other government and NGO programmes to bring synergy in the process of including more children with disabilities into the regular school system. It focuses on in-service training of general teachers to enable early detection, assessment, use of aids,

and making of individual educational plans. Although DPEP was initiated in 1994, integrated education for children with disabilities was formally added as a programme component in 1997. The programme covers 60 percent of the child population of the country and spreads over 176 districts in 15 states. Initially, states were provided with assistance to prepare action plans. By 1998, many states had carried out surveys and formal assessment camps, and had evolved strategies to provide resource support to children with special needs.

### ***District Rehabilitation Centres and National Programme for Rehabilitation for Persons with Disability (NPRPD)***

The Ministry of Social Justice and Empowerment has set up 11 District Rehabilitation Centres in 10 states—Orissa, Andhra Pradesh, Rajasthan, Maharashtra, Uttar Pradesh, Tamil Nadu, Haryana, West Bengal, Madhya Pradesh and Karnataka. A similar scheme called the National Programme for Rehabilitation for Persons with Disability (NPRPD) was launched in 1999. Under the scheme, financial resources are provided to state governments for initiating services at the district level. The government is using community-based rehabilitation as a strategy to scale up basic rehabilitation services, and to create a process for empowering people with disabilities, their families and Communities.

Rehabilitation Council of India (a statutory body set up by an act of Parliament under the Ministry of Social Justice and Empowerment, Government of India) in collaboration with Media Lab Asia (A section 25 company setup by the Ministry of Communications and Information Technology, Government of India) launched this interactive and informative web portal Punarbhava on Disability and Rehabilitation on March 12, 2008. Media Lab Asia has joined hands with RCI to fill the gap in the availability of information and thus improving the lives of persons with disabilities. The Web portal will open new horizons for persons with disabilities. This is the first-ever initiative in India where two Government of India Organizations have joined hands to reach the unreached and provide them opportunities to fully participate in the social life and become productive members of society. This project itself is a very good example of convergence and can be followed by others too.

**Punarbhava:** National Web Portal National interactive portal for the empowerment of differently-abled with information on Government policies, schemes, tools, and devices for the disabled.

**Navshikhar Channel:** Edusat based channel with studio and transmission centre at RCI connecting 473 RCI/MSJE recognized institution-giving programs for benefitting a large number of students undergoing special education RCI courses and other stakeholders in the field. Special programs on Braille, sign language, computer learning etc. Around 200 centers participated per program benefitting around 4000 students / special educators (on an average 20 persons/centre)

**Punarjjani:** Web enabled integrated assessment tool for mentally retarded children. It aids teachers in progress assessment and evaluation of the children with Mentally Retarded (MR). It integrates three standard tools widely used manually at present- FACP (Functional Assessment Checklist Programming), BASIC- MR (Behavioral Assessment Scale for Indian Children with Mental Retardation), and MDPS (Madras Development Programming System).



## The Rise of Neo-Fascism in Today's World: A Qualitative Analysis

**Sanyog-** Iconic commutation tool for persons with Cerebral Palsy & Speech Impairment. Its facility to construct simple sentences by a selection of icons develops natural language processing techniques used to generate grammatically correct sentences and a Text- to-Speech engine to produce output.

**Shruti-Drishti-** A web page browser for the visually impaired. In DAISY (Digital Accessible Information System) format. For graduate/post-graduate level in Hindi, English Law Political science, history, library sciences, social studies, journalism, mass communication, civil services, and other competitive examinations for visually impaired students.

### CONCLUSION

The inclusion of students with barriers to learning in ordinary schools is a part of the global movement for human rights. All learners have a right to education, regardless of their individual characteristics or difficulties. Over the last few decades, the development of inclusion has become central to international education policy and has forced major changes in national legislation in many countries. Starting in the 1980s, inclusive education has aimed to promote academic learning, social competence and skills, attitude change, and positive peer relations in inclusive settings for students with special needs.

### REFERENCES

- Abe, T.O & Adu, E.T. (2007). Impact of information and communication technology (ICT) on teacher education in Ikere. *Journal of Education, Ikere Ekiti, Vol.5.*, PP.169-175.
- Agarwal, J.C (1975). *Educational Research*. New Delhi. Arya Book Pepo.
- Angeli, C., & Valanides, N., (2009), "Epistemological and methodological issues for the conceptualization, development, and assessment of ICT-TPCK: Advances in technological pedagogical content knowledge (TPCK)". *Computer & Education, vol.52.1*, pp. 154-168.
- Avalos, B., (2011)., "Teacher professional development in Teaching and Teacher Education over ten years". *Teaching and teacher education, vol. 27. No. 1.* pp. 10-20. Doi: 10.1016/j.tate.2010.08.007
- Census of India (2011)., *Data on disability*, Office of the Registrar General and Census Commissioner, New Delhi, India. 27-12-2013.
- Deepa Mehta & Suman Kasnia. (2011)., A Scenario on the role of ICT in Governance and Education System, *International Journal of Computational Engineering & Management, Vol.13.*pp100-107.
- Department of Electronics and Information Technology (DeitY), *Ministry of Communication & IT, Government of India. Report*
- Fitzallen, N. (2005)., "Integrating ICT into professional practice: A case study of four mathematics teacher". *Proceedings of the 28<sup>th</sup> Mathematics Education Research Group of Australasia*, pp.353-360.
- Gargi Benerjee (2014)., ICT development in India: *Current scenario, International Journal of Current Research, Vol.6,01*, pp.4685-4689, January 2014.
- Hargittai, E. (2010)., "Digital natives. Variation in Internet Skills and Uses among Members of the "Next Generation". *Sociological Inquiry. doi: 10.1111/j. 1475-682X.2009.00317.X*.
- Helene Lidstrom and Helena Hemmingsson, Benefits of the use of ICT in school activities by students with motor, speech, visual and hearing impairment: a literature review,2014, *Scandinavian Journal of Occupational Therapy, (21), 4*, 251-266.

## The Rise of Neo-Fascism in Today's World: A Qualitative Analysis

- Jane Brodin (2010)., “Can ICT give children with disabilities equal opportunities”, *Improving schools, volume 13 Number 1*, March 2010? pp 99-112.
- Khan, S.H. (2012)., “Integration of ICT Component in Teacher Educational Institutions: An unavoidable Step towards Transforming the Quality of Present Teacher Education System. *Indian Streams Research Journal, Vol.2, no.5*
- MHRD (2016). National Policy on Education. Ministry of Human Resource Development, New Delhi.
- UNESCO. (2009)., “Guide to Measuring Information and Communication Technologies (ICT) in Education”. *Report of United Nations Educational, Scientific and Cultural Organization*” (UNESCO).

### **Acknowledgment**

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

### **Conflict of Interest**

The author(s) declared no conflict of interest.

**How to cite this article:** Lalitha, K. & Naveen, L. (2024). Cognitive Emotion Regulation in Medical and Non-Medical Students- A Comparative Study. *International Journal of Indian Psychology, 12(2)*, 4838-4837. DIP:18.01.432.20241202, DOI:10.25215/1202.432