Innovation The Research Concept

# A Comparetive Study of Awareness and Attitutde towards Use of Information Communication Technology for Disabled Students in Sonipat

## Abstract

The present study was conducted to use  of ICT for disabled children we find out that girls and boys have gained  % of more than 60% i.e. they have obtained 65.40 and 63%. That means girls are little bit aware and somewhat more positive attitude towards use of ICT for disabled children. From our study through filling of questionnaire we obtained that: girls are more aware of use of ICT for disabled children. Their performance is somewhat better than boys .Most of the boys are having positive attitude. So in brief we analyze that "when we are studied girls and boys of area sonipat. We found that girls are much aware and somewhat positive attitude towards use of ICT for disabled children than that of boys."

**Keywords:** Information and Communication Technologies, Education.

## Introduction

The Information and Communication Technologies (ICT) is defined as a "Diverse set of Technological tools and resources used to communicate, and to create, disseminate, store and manage information". ICT has become a very important part of the education and daily life activities. ICT is changing processes of teaching and learning by adding elements of vitality to learning environments including virtual environments for the purpose. Due to its capability to offer anytime and anywhere, access to remote learning resources, ICT is a potentially powerful tool for offering educational opportunities, both to un-served persons including persons with disabilities, as well as all others who for reasons of cost or because of time constraints are unable to go to face to face educational programmers.

The new digital ICT is not a single technology but combination of hardware, software, multimedia, and delivery systems.  Today, ICT in education encompasses a great range of rapidly evolving technologies such as desktop, notebook, and handheld computers, digital cameras, local area networking, Bluetooth, the Internet, the World Wide Web, streaming, and DVDs; and applications such as word processors, spreadsheets, tutorials, simulations, email, digital libraries, computer-mediated conferencing, videoconferencing, virtual environment, simulator, emulator etc.

Today ICT is being used as a tool for improving the quality of life by improved efficiency and enhanced effectiveness. Different types of ICT tools assist the people with disabilities by providing them with learning opportunities, capabilities and also increase potential of the disabled in different walks of life. ICT makes them capable by providing the ability to access knowledge with the help of suitable digital media. ICT is playing very important role in communicating with peers, thereby promoting collaborative and social learning environment. ICT also helps disabled students in reading, writing, hearing and seeing process. ICT is proving very effective in delivering learning to the disabled. An illustrious example in this respect is that of Stephen Hawking, the world renowned astrophysicist, who cannot even move any of his limbs and hardly can utter some words, contributing significantly at the highest level to the world of knowledge and research. It became possible due to the ICT device developed for him to communicate his ideas to the world. Till the recent past, the usual interface between an assistive device and an ICT system was hard wired. With the development in wireless systems, now the

**Rajkumari**
Assistant Professor,
Deptt.of Teacher Training,
BPS Institute of Teacher Training
& Research,
BPSMV,
Khanpur Kalan,
Sonipat, Haryana

**Innovation The Research Concept**

potential for new types of communication services which may assist different kind of disabled are emerging.

For example, disabled people may communicate to applications using wireless devices for locating (for blind) and communicating with the terminals. Developments in infrared links make it feasible for a disabled user to have a hand control unit with an infrared link to the terminal. For students with severe intellectual disabilities ICT can make a huge difference at school and in their home lives, allowing them to be active participants. Students with mild intellectual disabilities can also be assisted greatly by ICT programs; however, there can be a barrier of the student refusing extra help. These are valid problems that should not be ignored. While there are many constraints on the successful implementation of these programs, they can be overcome if attention is focused on this area of education. For students with intellectual disabilities there are programs which have been developed and are constantly being developed to allow them greater participation within the classroom. Many intellectually disabled students have limited to no verbal or written communication skills, so assistive technology is vital to their involvement in the world around them. "For most people technology makes things easier. For persons with disabilities, technology makes things possible". This statement creates a realisation about the responsibilities teachers have in making participation, inclusion and acceptance possible for these students. It is not simply a matter of making them more engaged or on-task, it is about allowing them to communicate what they are thinking and feeling in ways they never could before or without the use of ICT.

While assistive technologies can create a more meaningful life for students with severe disabilities it can also be helpful for all students in a mainstream classroom, particularly those with learning difficulties and mild intellectual disabilities. The effective use of ICT in the classroom will allow for greater participation and inclusion of all students, but particularly those with disabilities. There are still problems that need to be addressed so that ICT can become part of everyday teaching.

**Disability**

"Person with disability" means a person suffering from not less than forty percent of any disability as certified by a medical authority (any hospital or institution, specified for the purposes of this Act by notification by the appropriate Government). As per the act "Disability" means –

**Blindness**

Blindness refers to a condition where a person suffers from any of the following conditions
1.  Total absence of sight.
2.  Visual acuity not exceeding 6/60 or 20/200 in the better eye with correcting lenses;
3.  Limitation of the field of vision subtending an angle of 20 degree or worse.

**Person with Low Vision**

It means a person with impairment of visual functioning even after treatment or standard refractive correction but who uses or is potentially capable of using vision for the planning or execution of a task with appropriate assistive device.

**Leprosy Cured Person**

It means any person who has been cured of leprosy but is suffering from:
1.  Loss of sensation in hands or feet as well as loss of sensation and paresis in the eye and eye-lid but with no manifests deformity.
2.  Manifest deformity and paresis, but having sufficient mobility in their hands and feet to enable them to engage in normal economic activity.
3.  Extreme physical deformity as well as advanced age which prevent him from undertaking any gainful occupation, and the expression "leprosy cured" shall be construed accordingly.

**Hearing Impairment**

It means loss of sixty decibels or more in the better ear in the Conversational range of' Frequencies.

**Loco Motor Disability**
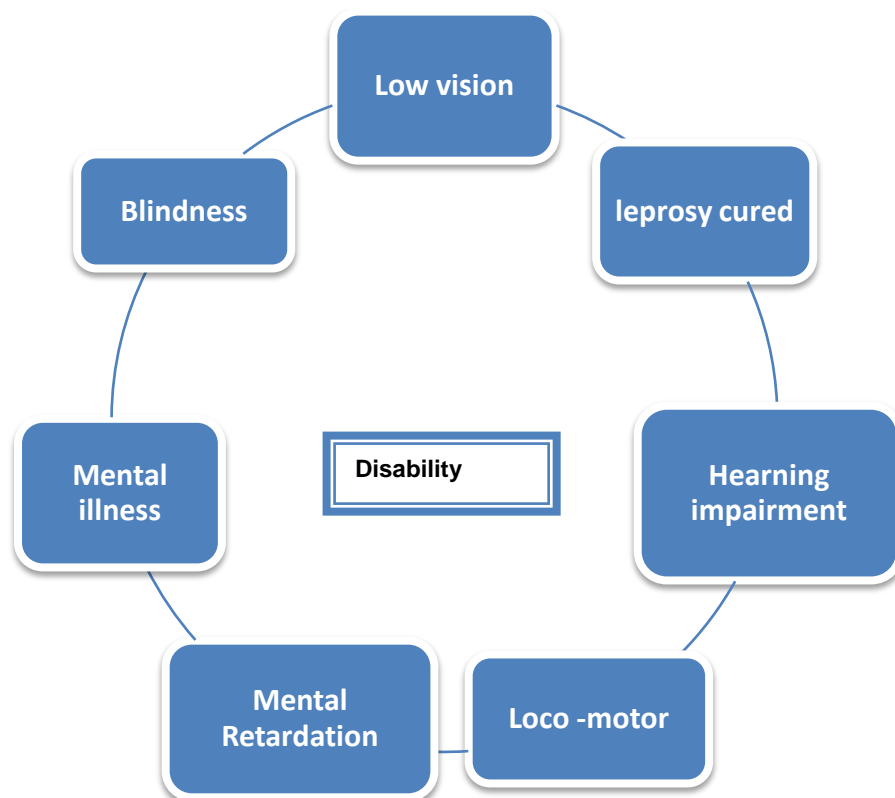
It means disability of the bones, joints muscles leading to substantial restriction of the movement of the limbs or any form of cerebral palsy.

**Mental Retardation**

Means a condition of arrested or incomplete development of mind of a person which is specially characterized by sub normality of intelligence.

**Mental Illness**

It means any mental disorder other than mental retardation.

```
                    ┌──────────────┐
                    │  Low vision  │
                    └──────────────┘
      ┌──────────────┐              ┌──────────────┐
      │  Blindness   │              │ leprosy cured│
      └──────────────┘              └──────────────┘

  ┌──────────────┐   ┌────────────┐   ┌──────────────┐
  │    Mental    │   │ Disability │   │   Hearning   │
  │    illness   │   └────────────┘   │  impairment  │
  └──────────────┘                    └──────────────┘

        ┌──────────────┐      ┌──────────────┐
        │    Mental    │      │  Loco -motor │
        │  Retardation │      └──────────────┘
        └──────────────┘
```

**Attitude**

Attitudes are a complex collection of beliefs, feelings, values and dispositions which characterise the way we think or feel about certain people or situations. People's attitudes are a product of life experiences, including the relationships we build with the people around us. For example, a person's attitudes towards one disabled person might be shaped by their personal experience of knowing another disabled person. And these attitudes often affect the way people behave in particular situations or towards other people. Attitudes are transient and change from person to person, from group to group and even within groups over time.

**Attitudes towards Technology**

Attitudes toward the use of technology in the classroom to enable core activities such as accessing the curriculum and completing class work may be negative among parents and teachers who are either unfamiliar or familiar but uncomfortable with the technology. For example, when calculators were first allowed in schools their use was restricted due to the predominant view at the time that their use would decrease student capabilities to perform basic arithmetic functions. Today calculators are freely available to use as a tool in the classroom. Similarly attitudinal barriers persist to the use of such tools as spell checkers, word prediction, text to speech and other performance support technologies that are often required by students with learning disabilities. This attitude of suspicion whereby such technologies are seen as a crutch must be acknowledged and overcome.

1. The provision of accessible ICT is now a human right issue and therefore can be viewed as a key component in meeting student's individual needs.
2. Technology is a helpful tool and not a crutch to be used by those less able.
3. Technology can help build a better educational environment for all students.
4. Accessible ICT is not about accommodations for the few but about providing all students with a better more differentiated learning experience.
5. Learning about accessible ICT is not just about accommodating students with disabilities but also about learning a life-skill.
6. Teachers need to be willing to learn new methods of teaching, new types and modes of curriculum materials and new technologies.
7. Teachers need to view disability as part of the continuum of learning styles and not as special or other.

**Difficulties of Disabled in using ICT**

Due to different kind of limitations, disabled people may not be able to use ICT applications and devices with ease, as it may be used by others. Some of the difficulties which are generally faced by different types of a disabled are:

1. A physical impaired user may have difficulties in using input devices.
2. A visual impaired user may have difficulties in seeing display devices.
3. A hearing impaired user may have difficulties in hearing audio information.
4. A person with learning/cognitive disability may have problem in understanding system operations.

To solve above mentioned problems assistive technologies are used. Assistive technologies usually refer to those products, devices or equipment's, which are used to increase or improve the functional capacities of individuals with disabilities. Some of the assistive technologies such as touch screen interface can be beneficial to those who have difficulty in using input devices such as a mouse or keyboard. When it is used in combination with software such as on-screen keyboards, or other assistive technology, they make computing facility more accessible to people who are having difficulty in using computers. ICT usually improves the efficiency and effectiveness of a common individual learner, but for a disabled learner it represents more than this. ICT for them is a sort of extension of their physical body part and provides an opportunity to communicate, gain access to education services and become gainfully employed

**ICT Help to Disabled in Learning**

ICT have the potential for reducing discrimination and providing more opportunities to engage people with disabilities in all aspects of life including teaching and learning. ICT offers a range of specialized software and hardware solutions for communicating, accessing and inputting data/information to/from web applications. Following are some of the ICT tools/applications for assisting different kind of disabled learners:

1. ICT bases specialized vocational training to perform functions within abilities
2. Specialized Keyboards, such as Braille
3. Braille Printer
4. Conversion of local language to Braille
5. Screen Readers
6. Eye Tracking
7. Talking word processors

**Accessibility**

Accessibility is the quality of a system that makes it easy to learn, easy to use, easy to remember, error tolerant, and subjectively pleasing. Content and tools included in the LMS should also be accessible, that people with disabilities should be able to use and access all the information provided for the learning experience, regardless of the type or degree of disability they suffer. Web Accessibility Initiative (WAI) guidelines are the result of the negotiations that the World Wide Web Consortium (W3C) adopted for promoting the use of ICT for people with disabilities. Web Content Accessibility Guidelines has given wide range of recommendations for making Web content more accessible to a wider range of people with disabilities, including blindness and low vision, deafness and hearing loss, learning disabilities, cognitive limitations, limited movement, speech disabilities, photosensitivity and combinations of these web applications developed using these guidelines often make Web content more usable to users in general. Web Content Accessibility Guidelines (WCAG) explains in detail how to make a Web site accessible for people with a variety of disabilities some of the key points of WCA Gare:

1. Provide text alternatives for any non-text content
2. Provide alternatives for time-based media.
3. Create content that can be presented in different ways without losing information or structure.
4. Make it easier for users to see and hear.
5. Make all functionality available from a keyboard.
6. Provide users enough time to read and use content.
7. Make text content readable and understandable.
8. Help users avoid and correct mistakes.

**Some Assistive Technologies Software**

Assistive technologies are used for helping the disable people for studying and gaining knowledge with the ICT. We briefly discuss about some of the software's used by different types of disabled people including physically impaired, visually impaired and hearing impaired. Assistive technologies (AT) are important factors in making classroom adaptations for students with learning disabilities. An assistive technology is defined as any item, piece of equipment, product or system whether acquired commercially off the shelf, modified, or customized that can be used to directly assist, maintain or improve functional capabilities of individuals with learning disabilities. Assistive technologies can be both high tech and low-tech tools. The purpose of AT is to provide tools that help those with learning disabilities reach their full potential. The tools provide through AT help to minimize the gap between ability and performance as outlined in the definition of learning disabilities.

**Benefits**

1. Increases independent learning
2. Provides greater choices and freedom for content delivery
3. Creates self-confidence by fostering success
4. Works with learners of all ages
5. Improves quality of life by removing barriers for future educational possibilities

**Review of Related Literature**

"Blind student reaches top of her class with accessible technology"

Ms Ignacio Picas, a student at Colegio San Benito, a primary-level school located in Santiago, uses a laptop computer with accessibility features in the Operating System and built-in tools in the office applications, together with screen reading software to participate fully in class. This enables Ignacio to maintain a near-perfect grade point average.

The university of Tokyo conduct a study "Mobile Phone strategies to support Learning for Students with Disabilities - The 99 tools from the magical pocket of Aki-chan" by Takeo Kondo and Kenryu Nakamura, Research Centre for Advanced Science and Technology. This research project provides tips on how mobile phones can offer strategies to engage students in learning in ways that best suit their needs. It covers reading, writing, keeping and making notes, understanding time, planning activities, listening, calculating and using a dictionary, surfing the web, calling and messaging friends which can all be undertaken on a mobile phone using tools from the 'magical pocket".

**Innovation The Research Concept**

**Objective of Study**
1. To study and compare the awareness of boys and girls with disability about ICT.
2. To study and compare the attitude of boys and girls with Disability towards ICT.
3. To study and compare the awareness of rural and urban disabled students towards ICT.
4. To study and compare the attitude of rural and urban disabled students towards ICT.

**Hypothesis of Study**
1. There exists no significant difference between male and female students with disability for their Awareness towards ICT.
2. There exists no significant difference between male and female students with disability for their attitude towards ICT.
3. There exists no significant difference between the Awareness of rural and urban students with Disability towards ICT.

4. There exists no significant difference between the attitude of boys and girls students with Disability towards ICT.

**Methodology**
Descriptive method of research will be employed for the present study. As this method is concerned with surveying, describing and investigating the existing phenomenon or issues, conditions and relationships that exist. This method will be enabling the investigator to investigate Awareness and Attitude of student with disability towards ICT& different categories- rural-urban, male-female.

**Tool**
Appropriate tools will be developed by the investigator for studying the Awareness and Attitude of Student with Disability towards ICT.
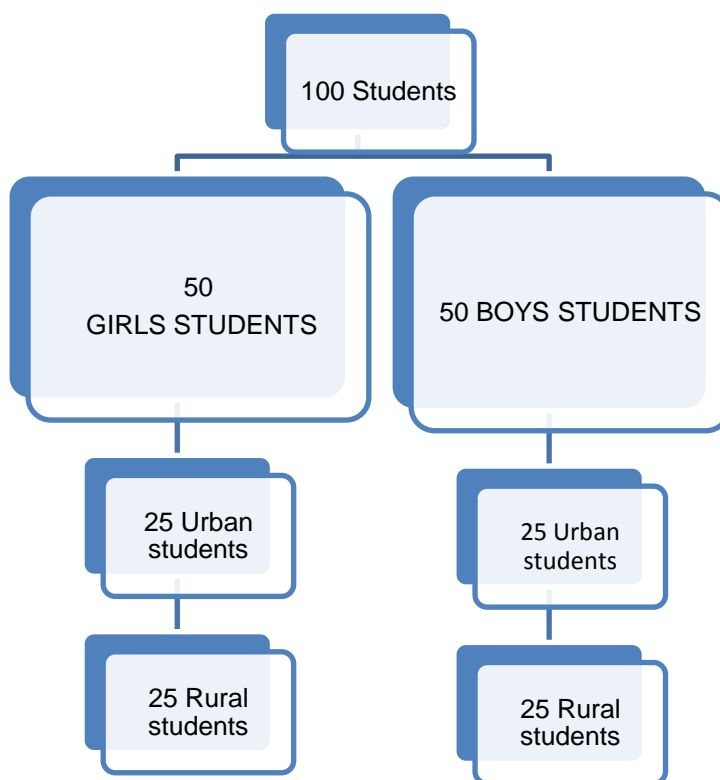


**Sample of the Study**
Sampling is very important part of behavioral research. It is indispensable to educational research. The research work cannot be undertaken without the selection of sample. A sample of 100 students with of disability towards ICT will be selected randomly from various educational institutions of Sonipat. The sample will consist of 50 girl students and 50 boy students, urban and rural students between the age group of 15 to 25. A graphic representation of the sample is given below:
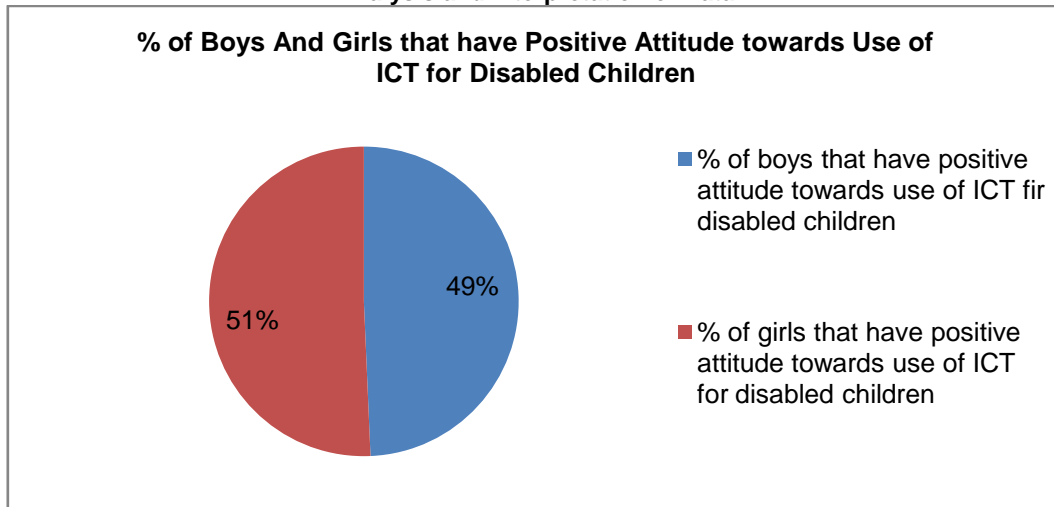
**Statistical Technique Used**
Various techniques were employed for testing hypothesis. A brief description of these techniques is made here.

**Descriptive Statistics**
Mean = sum of total observation/ number of toil observation = sum of % marks of boys or girls

# Innovation The Research Concept

**Analysis and Interpretation of Data**

**% of Boys And Girls that have Positive Attitude towards Use of ICT for Disabled Children**



- ■ % of boys that have positive attitude towards use of ICT fir disabled children
- ■ % of girls that have positive attitude towards use of ICT for disabled children

Average % for girls comes out to be = 65.40
Average % for boys comes out to be = 63.64
Then a pie chart is drawn for girls and boys from above data of average % of marks.
Boys occupies only 49% whereas girls occupy is 51%.

**Conclusion**

On the basis of statistical findings it was conclude that there were insignificant difference in our study of use of ICT for disabled children we find out that girls and boys have gained % of more than 60% i.e. they have obtained 65.40 and 63%. That means girls are little bit aware and somewhat more positive attitude towards use of ICT for disabled children. From our study through filling of questionnaire we obtained that: girls are more aware of use of ICT for disabled children. Their performance is somewhat better than boys .Most of the boys are having positive attitude. So in brief we analyze that "when we are studied girls and boys of area sonipat. We found that girls are much aware and somewhat positive attitude towards use of ICT for disabled children than that of boys."

**References**

1. Jenkins, J. R., & O'Connor, R. E. (2002). Early identification and intervention for young children with reading/learning disabilities. In R. Bradley, L. Danielson, & D. Hallahan (Eds.), Identification of learning disabilities: Research to practice (pp. 99–149). Mahwah, NJ: Erlbaum.
2. Jimenez, J.E., Siegel, L.S., & Rodrigo Lopez, M. (2003). The relationship between IQ and reading disabilities in English-speaking Canadian and Spanish children. Journal of Learning Disabilities, 36(1), 15–23.
3. The person with disabilities (Equal Opportunities, Protection of right and full Participation Act 1995)
4. ICT opportunity for person with Disabilities (international Telecommunication Union) www.int/accessibility
5. Robert B. Kozma, (2014), 'Technology, Innovation and Educational change: A Global Perspective: A report of the second Information Technology in Education study, module 2.', International Society for Technology in Education.
6. Wiki books,' ICT in Education', 'The uses of ICTS in Education'
7. Akpinar, Y., Bayramoglu, Y. (2008). Promoting teachers' positive attitude towards web use: a study in web site development, The Turkish Online Journal of Educational Technology – TOJET, 7(3), Article 5, Available on http://www.tojet.net/articles/735.doc
8. Student teacher competence and Attitude towards information communication Technology (Study in a Nigerian University)
9. Current attitude towards Disabled people(2014) www.scope.org.reserch
10. Research evidence about using ICT to support SEN and inclusion
11. The role of ICT sonnet project the Mastic report(2012)
12. ICT in education for people with Disabilities (2011) published by UNESKO institute for information technologies in education
13. Fact on Disability in the world of work Disabled world. http;// www.Disabled-world.com
14. Accessible ICTs and Personalized learning students with Disabilities (2011)
15. Innovation and Technology for persons with Disabilities