

# ICT - An Enrichment Tool for Cognitively Disabled

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**Abstract:** Cognitive disability includes conditions like autism, Alzheimer's, dementia and mental retardation. This term is broader than intellectual disability. This disability adversely impact ability to access, process or remember information of any individual. It may be of mild, moderate or severe variety. ICT (Information and Communication Technology) is the use of computer and technological advances for the development of society and enhancement of skills. ICT acts as an appropriate tool for bringing desirable social changes. ICT is being used increasingly for imparting education to the students. It can navigate the path of equality, educational equity and provide opportunity for both normal and specially need persons. ICT will become helpful in removing the stigma associated with cognitive disability. Author hereby intends to discuss the value and benefits of ICT for cognitively disabled persons.

**Keywords:** Information and Communication Technology; ICT; Specially need person; Cognitive disability; Intellectual disability

## 1. Introduction

Before going into the details of cognitive disability, we have to get familiar with the term "cognition". In simple language, Cognition can be defined as "the process of knowing including thinking, remembering and communicating." Cognition is a mental process which develops and regulates persons' thought, emotion and behaviour. These are higher-level functions of the brain and encompass language, imagination, perception and planning [1]. Those who usually demonstrate considerable deficiency in these mental processes are recognized as cognitively disabled. Various authors have described the term cognitive disability differently. Authors are in favour of use of the following description for cognitive disability:

"Cognitive disability" includes conditions like autism, dementia, Alzheimer's and intellectual disability and is a broader term than intellectual disability itself. Also, some forms of cognitive disability do not imply diminished intellectual capacity (e.g., autism). The functional definition of cognitive disability found on the Web site of the U.S. Environmental Protection Agency is as follows [2]:

Cognitive disabilities cover a wide range of needs and abilities that vary for each specific person. Conditions range from person having a serious mental impairment caused by Alzheimer's disease, Bipolar Disorder or medications to non-organic disorders such as dyslexia, attention deficit disorder, poor literacy or problems understanding information. At a basic level, these disabilities affect the mental process of knowledge, including aspects such as awareness, perception, reasoning, and judgment.

## 2. Literature Survey

### Types of Cognitive Disabilities:

According to the severity, there are three types of cognitive disability. These are as follows:

- 1) Mild cognitive disability (IQ ranging from 55 to 70)
- 2) Moderate cognitive disability (IQ ranging from 30 to 55)
- 3) Severe cognitive disability (IQ below 30)

The most prevalent type of cognitive disability is mild type, which accounts for around 85% of all cognitive disabilities. Children, who come under this section are almost normal in behaviour and are usually included in the regular classroom with their normal peers. These children have problem in memorization of previously learned material, problems in making predictions and narrow attention spans. They have poor short-term memories and difficulties in transfer of learning.

The second commonest form of cognitive disability is moderate variety. These kids may have simple communication skills, noticeable delays and also might present with difficulties in social situations. About 10% of kids who've been diagnosed with a cognitive disability fall in the moderate range.

In severe variety of cognitive disability, the child will have poor communication skills and will need direct supervision. Among all cognitive disabilities, only about 3-4% of children have a severe cognitive disability [3].

### Information and Communication Technology (ICT)

In a simple language, ICT is use of computer and technological advances for multiple uses for development of society and enhancement of skills. One of the key use area is imparting education to the educands. Other words used alternatively for ICT are information technology and computer technology [4].

It is a combination of hardware, software and network to communicate information, ideas, feelings and recent advances in a two way approach. Use of ICT is aimed to enrich the knowledge, improve communication skills and evaluation of core concepts and to increase the analytical power of the students.

### Use of ICT for the enrichment of cognitively disabled

ICT can act as an appropriate tool for bringing desirable social changes. It can navigate the path of equality, educational equity and provide opportunity for both normal

and specially need persons to become integrated into mainstream society, so that they may realize their full potential. With the advent of information and communications technology (ICT), new hopes are emerging for cognitively disabled. Despite the huge challenges, sincere efforts are being undertaken to implement the use of ICT to counter obstacles related to disability. The instructor of cognitively disabled educands must try to learn and master the skills of using different software and programmes used for giving instructions to the educands. He must also possess requisite knowledge about use of ICT in language development and communication. In the hands of a good teacher, ICT is very useful for supporting individual students' needs and provide exposure to online resources in many ways.

### ICT tools

Talking books, word-list facilities, laptop computers, talking word processors and speech-driven writing tools are some of the tools available for the teachers to support the need of cognitively disabled.

Students with intellectual or reading disabilities, dyslexia and other disabilities are can follow educational courses via digital and audio libraries, access their learning content and resources through the Internet. Students can connect from anywhere and read or hear the relevant books [5]. This breakthrough technology brings local library or University to their homes and fulfil the motto of decentralisation of education and support door to door education.

### 3. Benefits of ICT

#### ICT supports multisensory approach

As established by realism philosophy that "senses are the gateways of knowledge". This means that what we experience through touch, seeing, smell and hearing is helpful in permanent learning.

In this approach, cognitive disabled children are taught by using their multiple senses- visual, auditory, touch, smell and taste, depending on the nature and demand of learning experiences (content) and its stipulated objectives. For example, to provide such type of experiences, a multisensory approach named VAKT has been devised for learning disabled children.

A study conducted by Guo et al. (2005) concluded that significantly improved frequency and quality of social interaction was found in differently abled people, who have access to the Internet. According to this study, Internet is also helpful in minimizing the existing social barriers in the physical and social environment for differently abled person [6].

#### Reduces the stigma associated with cognitive disability:

Visually anonymous nature of working of Internet and ICT can allow people with cognitive disability to reduce the stigma they experience while learning through traditional approaches. The Internet has also been found to be successful in reducing multiple barriers to education and

learning as now people with cognitive disability can receive long- distance education with the help of computers [5]. Benefits of ICT for cognitively disabled person can be summarised in one sentence:

*"Disabled but not disqualified"*

The Government and non- governmental organizations have to work hard to achieve this goal. Use of ICT can pave the way towards this target.

#### ICT can reduce Inequalities:

ICT is helpful for individualized mode of teaching as it works on the principles of individual differences and pace.

In their study, Parsons et al. (2008) stated that for the day care centres and their employees to perform in a better way, they have to use the ICT for the purpose of giving person-centred care for intellectually disabled people. They also stated that ICT would become a great tool for communication and inclusion of such people if it is used effectively by the caregivers [7].

### 4. Conclusion

In nutshell, we can conclude that cognitively disabled persons are part of our society. No society can flourish if it does not offer opportunities and hope for its poorer sections. The cognitively disabled persons form these poor section of society in terms of education. Methodical and judicious use of ICT can bring a new leash of life to this underprivileged section and in turn can help to make our society stronger. ICT offers new horizons for the development of whole society but hope is much more for persons with disability. In fact, ICT may assist these types of people in their day to day routine than the normal population. If the ICT is used comprehensively by and for this target group, they may lead a near normal life and may feel socially included. Use of ICT for cognitive disabled person is not free from the obstacles, still these big hurdles are being minimized by the sincere efforts of the people behind the development and advancement of ICT.

### References

- [1] Fareed M, Afzal M. (2014) Estimating the inbreeding depression on cognitive behavior: A population based study of child cohort. *PLoS ONE* 9(10):e109585.
- [2] Section 508: Accessibility. (2016 January 25) retrieved from: <http://www.epa.gov/accessibility/technology/disabilities.htm> (Published December 29, 2008).
- [3] Intellectual disabilities. *J. Appl. Res. Intell. Disabil.* **2008**, 21, 19–33.
- [4] Eid, N. (2015). Innovation and Technology for Persons with Disabilities. Retrieved from: <http://www.un.org/esa/socdev/egms/docs/2013/ict/innovation-technology-disability>.
- [5] Cognitive disability and its challenge to moral philosophy. Ed. Eva Feder, Kittay, Licia Carlson. Wiley-Blackwell. United Kingdom, **2010**. Vol. 40, no. 3-4 (July 2009).
- [6] Guo, B.; Bricout, J.C.; Huang, J. A common open space or a digital divide? A social model perspective on the

online disability community in China. *Disabil. Soc.* **2005**, 20, 49–66.

- [7] Parsons, S.; Daniels, H.; Porter, J.; Robertson, C. Resources, staff beliefs and organizational culture: Factors in the use of information and communication technology for adults with Intellectual Disabilities. *Jour App Res Intellectual Dis.* **2008**, 21, 19-34.

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## Author Profile



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### Previous positions:

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- 2) Worked as Programme Coordinator, Unity Degree College Lucknow (S-581) Study Center of Uttar Pradesh Rjarshi Tandon Open University, Allahabad.
- 3) Worked as Coordinator, RFU-National Testing Service-India, Mysore at Unity Degree College Lucknow Center (Regional Field Unit).
- 4) Worked as Academic counselor of IGNOU at Lucknow University study Centre.
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