ICT Powers To Fight Learning Disability In School Children: Literacy Software Solution To Struggling Readers

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Abstract—This paper focuses on the problem of learning disability (cognitive impairments)found in most of the children at teenage. There are many problem areas under this section where we focus on the reading and tried to give a solution through ICT as a tool for the same. We hope our work can contribute for the better learning of such school going children. The Software like Text Help System provides literacy software solutions. This software is developed to help strugglingEnglish readers and writers, those with literacy difficulties, learning disabilities such as dyslexia, mild visual impairments. It helps to improve users reading, writing and research skills at school, in the workplace, and at home.
ICT to a great extent facilitates the acquisition and absorption of knowledge, and hence can provide extraordinary opportunities to developing countries for enhancing their educational systems particularly for the underprivileged constituency, and thereby for raising the level of quality of life of their people. The new communications technologies promise to reduce the sense of isolation, and open access to knowledge in ways unthinkable, not long ago.

KEY WORDS: learning disables, slow learner, dyslexia, VLE,ICT, MCT,Cloud Computing, M-learning, Text Help Systems.

INTRODUCTION

No group of neurologically based disorders more urgently calls for an interdisciplinary offensive than learning disabilities. These constitutionally determined conditions sculpt a child's perception and interaction with his or her social environment, commonly before formal school years even commence. During the school years, academic demands upon the unprepared mind—in an arena filled with peers of similar age but varying levels of cognitive development—further confuse the child, frustrating optimal achievement. Too often, only after lifelong emotional wounds have been inflicted, is the nature of the student's struggle correctly identified but still under-rehabilitated educationally, emotionally, and physically. To avert this failure of an appropriate societal response, the private educational sector has stepped forward to construct an environment conducive to the academic and social growth of individual learners, as this text initiated by a private school confirms.

UNDERSTANDING THE NATURE AND SYMPTOMS OF LEARNING DISABILITIES

We want to review what learning disabilities are, focusing on the reality that learning disabilities are not just a school disability but are a life disability. This major theme is expounded on in our paper."The Misunderstood Child" This book is written for parents and contains information about what parents can do to help their child to be successful through adolescence. I meet with parents who have children who have been in special education programs for years, they show me a very thick file. I'll ask them to summarize the information for me and listed their child's learning disabilities and, equally important, a list of their child's abilities and strengths. This information is critical. The job of a parent is to learn how to build on their child's strength's rather than expose or magnify their weaknesses. The role of special education programs is to build on the strengths while helping to compensate for or overcome the weaknesses. To do this, the parents must know their child's learning abilities as well as the child's disabilities.The first step in learning is to bring information to the brain and record it. This is called "input." The second step, once the information is in, is to make sense out of it. This is referred to as "integration." The third step, after input and integration, is to be able to store information so it can be retrieved again. This is termed "memory." The last step, after the information is brought in, integrated, made sense out of, and stored, is to get the information out again, called "output." Thus we talk about input disabilities, integration disabilities, memory disabilities, and output disabilities.

EDUCATIONAL NEEDS OF CHILDREN WITH DISABILITIES

The special educational requirements of children with disabilities caused by a functional limitation are often called special educational needs (SENs), and they are both diverse and varied. UNESCO groups the roles that ICTs can play into three main categories:
1)Compensation uses – Technical assistance that enables active participation in traditional educational activities, such as reading or writing.

2)Didactic uses – The general process of using ICTs to transform approaches to education. Many ICTs can be used as didactical tools to enable a more inclusive learning environment.

3)Communication uses – Technologies that can enable communication – often referred to as alternative and augmentative communication devices and strategies.

The following sections discuss the main categories of physical, sensory and cognitive disabilities and refer to best practices for ensuring that accessible ICTs enable learning in an inclusive school environment.

COGNITIVE IMPAIRMENTS

The "Disabled World" project proposes two main classifications of cognitive disabilities – namely,functional or clinical disability.44 Clinical categories of cognitive disabilities include autism and DownSyndrome. Less-severe cognitive conditions include the sub-category of so-called learning disabilities,such as dyslexia (reading) and dyscalculia (mathematics). The functional disability perspective ignorethe medical and behavioral causes of cognitive disabilities and focuses instead on the abilities andchallenges the person with a cognitive disability faces. Functional cognitive disabilities may involvedifficulties or deficits involving:

- Problem-solving,
- Attention,
- Memory,
- Math comprehension,
- Visual comprehension,
- Reading,
- Linguistic (speech), and
- Verbal comprehension.

The following list shows the benefits that access to ICTs can bring to people within the wide spectrum oflearning disabilities.These include:

- Improved writing – Standard word processors contain built-in tools for checking grammar,
- spell-checking and predictive typing.46 Specialized writing support programs, such as Clicker.

By Studying the above facts when we survey the nearby schools in Vashi,Navi Mumbai we collect the following facts and observations

A. AGE GROUP   : 12 AND 13 YEARS

B. STANDARD   : 7TH AND 8TH

C. SAMPLE SPACE: 300 STUDENTS.

D. PROCEDURE   : QUESTIONAIRE

E. GENDER MALE: 150 STUDENTS

F.GENDER FEMALE: 150 STUDENTS

F.AREA   : NAVIMUMBAI VASHI

H. SOURCE OF DATA: PRIMARY + SECONDARY

We have following obesrvation with us,
It is estimated that **15-20%** of the population have a language based learning disability, with dyslexia the most common.

English Language Learners are the fastest-growing population of public school students **(10.3%).**

Approximately **38%** of fourth grade students have "below basic" reading skills.

 Approximately 22% were found with low mental ability to recall and memorize concepts.

Approximately 10.8% were slow learners.

V. DEVELOPING AND IMPLEMENTING ACCESSIBLE, ICT-CONNECTED SCHOOLS:TRENDS INTECHNOLOGY DEVELOPMENT.

To improve the performance of the students we conceptually can use any of the following ICT technologies through which teacher could also benefited while providing and adapting different teaching methods. For the same teachers can suggest the new or existing methods to deal with problems faced by these students, according to which program developers can work on the accessibility of the technology.

A. Cloud Computing

Cloud computing is a current technological paradigm shift in which computing resources such as software are distributed over the Internet and made available to computers and other devices on-demand. The implication here is that AT software applications do not have to be installed on a particular machine, but rather can be accessed through the Internet from any computer. Preliminary approaches, such as online screen-readers, have "yielded promising results towards an inclusive Web by removing both economical and accessibility barriers."

B. Mobile Learning

Lack of access to a computer in developing countries restricts many people's access to the Internet. Mobile phone ownership is far greater in developing countries than PC ownership. Mobile learning, or m-learning, is an array of e-learning over mobile devices such as mobile phones, which is of potential benefit to users in developing countries, especially those living in remote rural locations.

C.Broadband Connectivity

Connecting all primary, secondary and post-secondary schools to ICTs by 2015 was one of the targets

set by world leaders at the World Summit on the Information Society (WSIS). The lack of fixed-line telecommunication infrastructure has been an obstacle to accessing the Internet in many under-served and
remote parts of the developing world. The increasing levels of connectivity to the Internet through
wireless broadband -- a growing trend in developing countries -- promises to improve Internet
connectivity in developing countries, including in schools. For students with disabilities, the possibility of accessing educational content online will significantly improve their ability to participate in mainstream education.

D.Learning Platforms

Learning platform is a generic term used to describe a broad range of ICT systems that are used to deliver and support learning. These include Virtual Learning Environments (VLEs), which combine several functions such as delivering course work over the Web or an intranet to students or allowing students and teachers to interact. VLEs are regularly used for 'blended learning' that supplements traditional, face to face classroom activities. VLEs are most often used in higher (second or third level) education. Some VLEs are capable of producing content that conforms with the Web Content Accessibility Guidelines from the Web Accessibility Initiative. One such open-source VLE is called "Moodle."

VI. BEST PRACTICES: TVET PROGRAMMES

One of the key roles an MCT can play is to provide job training for persons with disabilities. This can be accomplished via Technical and Vocational Education and Training (TVET), which enhances productivity and sustains competitiveness in the global economy. TVET is not just a means of preparing young people for the world of work, it is also a "means of reaching out to the marginalized and excluded groups to engage them in income-generating livelihoods. "TVET for poverty alleviation has become a priority for many governments in developing countries. The success and future expansion of TVET programs in developing countries depends on the continued expansion of existing training programmes and continued cooperation among national and international bodies. TVET best practices for personswith disabilities include:

- Providing qualifications that are part of the educational qualifications framework of the country;
- Providing certification that is valued by employers;
- Acting as a bridge to return to further, more formal education, should the person wish to; and
- Taking into account the low levels of literacy, numeracy and ICT skills among persons with disabilities, and recognizing that previous educational experiences may have been negative.

In addition, MCTs providing training for persons with disabilities should foster strong relationships with local employers, and could provide some level of support in placing graduates in jobs. They could also support employers by identifying workplace accommodations and helping find appropriate ATs. Job placement support enables prospective employers to overcome negative perceptions about employing a person with a disability. Employers can also receive advice and practical support in making workplace adjustments, which can include procuring and installing ATs required to enable the person to work. This is the key to facilitating the transition from education and training to employment.
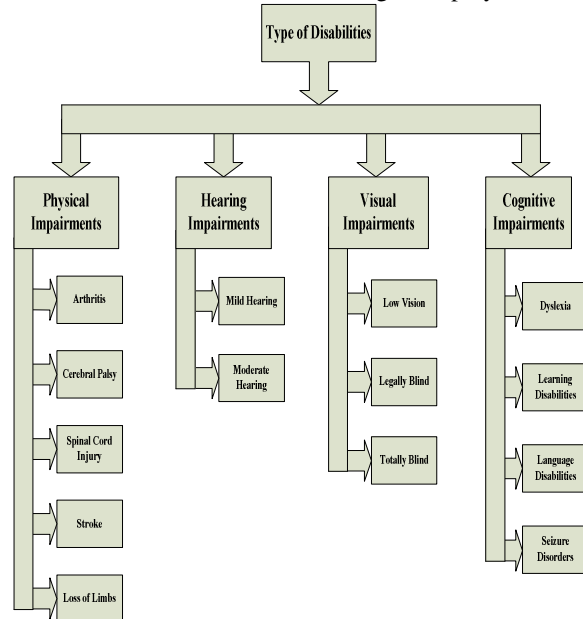

Fig.1Types of Tools for Disabilities

VII. HOW CAN ICT HELP TOImprove The Reading Skills .

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 as shown in Fig.1.Following are some of the ICT tools/applications for assisting the students with learning disabilities.

Accessibility is the quality of a system that makes it easy to learn, easy to use, easy to remember, error tolerant, and subjectively pleasing. [12]. Content and tools included in the LMS should also be accessible, i.e., that people with disabilities should be able touse and access all the information provided for the learning experience, regardless of the type or degree of disability they suffer. Further Following are the activities can be involved tohelp learning Disables:-

- Development of user-friendly multiple types of user interfaces for the same devise\application for facilitating different types of disables , to increase their ability to use the services
- Making of people with disabilities as part of the decision making and planning effort alongside disability experts in projects related to disabled users
- Making tools used by disabled, to create, check and validate educational content , in such a way so that it should be accessible for teachers and system administrators with disabilities
- Providing consistency in the layout of keypads at least for blind learners
- Enabling hearing impaired person with access to audio output with proper volume control
- Advocating and supporting of more open source applications development for people with disabilities.

VII. 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 used by different types of disabled people. This software would help the slow learner to overcome the problem of English learning and would support for reference. Text Help System [23] provides literacy software solutions. This software is developed to help struggling readers and writers, those with literacy difficulties, learning disabilities such as dyslexia, mild visual impairments, and also those for whom English is a second language. It helps to improve users reading, writing and research skills at school, in the workplace, and at home.
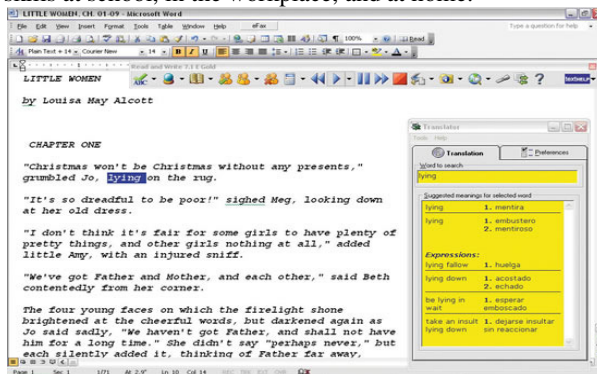

Fig.2Text Help Systems

Help systems should be conveniently accessible in locations where users can possibly need answers totheir questions, e.g., when they get started using a website, and when they could benefit from useful information.They're critical because they are one of the last places a website visitor will look before deciding to give up and search for another website that will fulfill their requirements.

Therefore, help systems can be crucial in retaining your site visitors.While help systems are important and oftentimes indispensable, many website designs overlook the usefulness and importance of them. The reason for this is usually a lack of awareness by the website owner of the need for help content or of the benefit of integrating it into the content of the website.

For example, in the case of an online shop, you could put purchasing instructions on the home page or somewhere where users could easily find them, instead of creating a separate help section. This would also increase find ability. Almost every type of website has to help its users, but in different ways. The type of website will determine the type of help system you should be providing. Moreover, the effectiveness of a help system has a direct relationship to the quality of the site's design. A poorly designed help system — however good its content — makes for a shoddy user experience.

VIII. CONCLUSION

ICT means new digital technologies (hardware and software) and of course new hope for people with disabilities for their teaching and learning. ICTs can be a powerful tool in supporting education and inclusiveness of the people with disability.

The learning resources must be developed to meet the requirements of all disabled people by overcoming the traditional barriers to mobility and geographic distance. Designers and developer of ICT applications do not have to forget usability, and must adhere to the conformance all accessibility guidelines in their applications. This shows that there is large scope of Research in the topic of ICT for Disability.

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