Teaching Visually Impaired Children in Distance Education Mode: A Pleasant Experience

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Abstract
One of the most amazing developments seen in education is the way that technology has created a revolution in possibilities for disabled. For several years differently-abled students have struggled a lot in many ways which resulted in adequate and unequal educational opportunities for them. Distance learning has enabled students who are unable to attend a traditional school setting, due to disability. Therefore distance education provides equal access regardless of socioeconomic status or income, area of residence, gender, race and age. Applying universal design strategies to distance learning can increase the accessibility to students with a range of abilities, disabilities and learning styles. Due to the rapid development and application of technology it has created tremendous changes in availability of more and more options for them which puts an end for the isolation and limited educational opportunities among the disabled. New technologies have allowed students to take advantage of many opportunities for success as other students for changing yesterday’s disabled students into today’s enabled students. Finally, there arise institutional challenges as this distance learning is new enough that it may also be a challenge to gain support for these programs in a traditional brick-and-mortar academic learning environment. Furthermore, it may be more difficult for the instructor to organize and plan a distance learning program, especially since many are new programs and their organizational needs are different from a traditional learning program. This paper throws its light on Educational needs of the disabled, accessibility, multiple distance delivery technologies, guidelines for students in using assistive technology.

Keywords: Visually Impaired Children, Distance Delivery Technologies, Educational Opportunities, Distance Education, Persons with disabilities, Educational Needs, Institutional Challenges
1 Introduction

Persons with disabilities are an integral part of society. They have witnessed various phases of attitude of the society towards them throughout the history in the world. In all the countries of the world, people with disabilities are the largest minority group. They are subjected to a long history of neglect, segregation, isolation, deprivation, charity, welfare and even pity. The human body is composed of a number of organ-systems. Damage to any one of them may give rise to problem in receiving education and undertaking of social activities. The society should realize that the disabled people are endowed with different abilities.

The history of the world has lots of examples of people with disability who have made very significant growth and social contribution. Therefore, it is necessary to change the predominantly negative perception into a realistic broad positive perception of people with disabilities.

The basic human needs for a satisfactory human existence are universal—the physical needs of food, health, shelter, clothing and social needs of education, creative employment, individual freedom and ability to participate in the prevailing social system. To be denied any of these needs is to be denied the prospect of a fulfilled life. It becomes the fundamental obligation of the society to make necessary efforts for the fulfillment of the basic needs of the entire population including the person with disabilities.

1.1 Educational needs of the disabled

Every disability whether it is physical, sensory, cognitive interferes with the normal process of teaching and learning. It is the responsibility of every teacher to try to understand the needs of every child with or without disability and devise innovative means of optimizing the child’s learning, more so of the child with disability. Individual differences among children with special educational needs are to be seen and understood and the important implications recognized. No matter what the disability, every child does retain substantial potential for learning. Conditions for optimizing learning have to be given special attention by teachers. This could be done by adopting methods of joyful learning to teach and making the presentation simple, concrete and interesting. Certain children may require plus curricular activities like children with seeing problem may need to read Braille, large prints or listen to recorded tapes. Teaching should be designed to help students to achieve appropriate learning outcomes. The nature and severity of the disability of the child may limit the child’s ability to learn in the ordinary way. They may need accessible reading material, special aids and appliances and motivation to optimize their learning.

1.2 Distance Education for Individuals with Disabilities

Children with disability are routinely edged out of an education system that’s hesitant to acknowledge diversity. Inclusion may be the key word in our current education policy but on the ground there is still a world of difference between the law and its implementation. School systems are required by law to specify and implement alternative models for education of the children with disabilities. Educational placement for the disabled must be provided in accordance with the due process procedures with the least restrictive alternative. Prevailing societal attitudes reflect a medical model of disability, one that requires special treatment for students with disability. A part of that special treatment is a special and separate educational system. Provisions for education of children with disabilities are usually made in
Special schools. But these special schools are completely inadequate to cater to the needs of the vast population of children with disabilities. So steps have been taken to make provision of education for these children.

All disabled children cannot be benefitted by the formal learning system. There are many over-aged children and dropouts who may like to continue education through distance mode which assists persons with disabilities to meet their specific educational needs and continue higher education. Such distance education opportunities must be used to the maximum possible extent to make more disabled persons educated.

2. Accessibility of hardware and software to promote access for individuals with disabilities.

Too often, individuals with disabilities who have a computer, assistive technology, and an Internet connection cannot make full use of their capabilities because of inaccessible features. Hardware and software are two critical elements that determine whether individuals with disabilities can access distance education in an independent and self-sufficient manner. Hardware in distance education that can pose accessibility problems for individuals with disabilities can include computers, microphones, televisions, or cameras. Software difficulties can arise in many formats including Web-based content, instructional applications, video conferencing software, productivity applications and closed captioning technologies.

In distance education, inaccessibility of content can be introduced at three points within the distance delivery mechanism: 1) during development, 2) during transmission, or 3) during reception. Hardware and software is used extensively in the delivery of all distance education mediums (e.g., Web, satellite, and video conferencing). There is an increasing need for development of hardware and software that allows for accessible development, transmission, and reception of distance education content.

2.1 Accessibility of Content: Designing and Delivering Distance Learning

The availability of accessible hardware and software will go a long way to ensure that distance education content is accessible to those with disabilities. However necessary, it is not sufficient. Once students get to the information, it must then make sense. This is why instructors must make sure they deliver accessible content. In most cases, providing accessible content can be accomplished through principles of universal design. However, there are times when it is still necessary to add content-specific accessibility features.

In general there are two dimensions that are required for content to be accessible. The first is that it is understandable in its presentation form if a student used her screen reader to access a course Web site, the content must be useful to her once it is presented in a sequential manner. Careful considerations must be made in Web design to insure that important relationships and interactions of the content are not lost. It is common for a Web site to have all elements directly accessible to the end user but so disorienting in its presentation that the material is rendered useless.

Another important dimension is that the content be complete. Students with disabilities can be denied access to content in subtle, yet powerful, ways. If the text descriptions of images are not included, then the information will be lost to the student. Many instructors use technologies that can render educational material either incomplete or not understandable. The use of Microsoft Office tools (i.e.,
Word, Excel, and PowerPoint) and PDF documents is ubiquitous in distance education today. These materials can be constructed in accessible and inaccessible ways. The plethora of course or learning management systems enables those without much technical skill to place course content on the Web. Multimedia and interaction tools (e.g., white boards, chats, discussion forums) can often be constructed to deliver accessible content, but this will occur only if the developer is knowledgeable about accessibility. The true blessing and curse of distance education today is that just about anyone can place content on the Web.

The relevant information about how to design and deliver accessible content is scattered in many places. Often, these rich sources of information are grant-funded and as such are maintained and available for only a few short years. There is a need to organize and coordinate information in a central repository that can be kept current.

3 Multiple distance delivery technologies

The scope of degree program encompasses multiple distance delivery technologies which includes audio conferencing, compressed video, CD-ROM, audio tapes, custom videotapes. It also capitalizes on unique capabilities of many media like video, text and audio. All students have accessibility to use the materials in which the creation of such environment has been the constant challenge and commitment.

Students come to the campus for two weeks during a summer of their program and receive individualized training in orientation and mobility i.e. using white cane and hands-on training with specialized adaptive equipment which includes Braille keyboards, embossers, enlargers etc. Apart from this their entire learning program is that of a virtual learner, separated from their instructors and peers by time and distance.

4 Requirements for its success

Successful distance education efforts of this magnitude require the collaboration of a variety of specializations. A very special collaboration between the Division of Special Education and the Department of Educational Technology along with the support of program management, facility design, faculty assignments, scheduling, graduate student assistance, logistics, and professional development are examples of the areas requiring cooperation.

5 Guidelines for Students in using assistive technology

- Every student’s assistive technology needs are unique. Student needs should be matched with necessary technology rather than matching available equipment to student needs.
- Functional use of assistive technology may require a combination of large print, speech, or Braille. A student may require redundant sensory feedback in addition to their primary learning media (e.g. low vision student using speech output or totally blind students using speech and Braille in combination).
The goal is to maximize the functional print and/or Braille reading, writing, and/or communication rate.

Reading paper materials (print or Braille) may be different from reading electronically (using a computer monitor, CCTV, speech output, audio tape, or refreshable Braille).

Ergonomics is important for all students at all grades with all equipment and materials. This includes keyboard location, monitor placement, feet flat on floor, book placement, assistive technology location, etc.

Learning and using assistive technology is a developmental process. If a student’s communicative or sensory functioning, i.e. hearing, vision, and/or tactual skills, change, a new technology evaluation is needed. Time and instruction is needed for learning new sensory, learning media, and assistive technology/communication skills.

Every student needs a personal communication (reading and writing) system to communicate with themselves and others.

Recreation, leisure, entertainment and other socialization activities are valid uses of assistive technology.

6 Conclusion
Determining the nature and purpose of distance education—and defining its appropriate role—can be difficult because it requires that institutions locate themselves in the midst of multiple issues: technological advances, pedagogical change, business model change, organizational adaptability, knowledge management, and increased access to education. Some assert that distance education represents a strategic "inflection point" for higher education, signaling the fundamental transformation of education as we know it.

If we are clear about the problem we are trying to solve and whom we wish to serve with distance education, we will be able to make better decisions regarding it. Distance education is fundamentally an education issue. Viewed in this light, it offers students and faculty an alternative to our still-rich residential tradition, one which need not threaten the current tradition but can work alongside it to broaden the number and types of people with access to an education, and thus help to serve us all. Hence the effective new assistive tools generated by developments in electronic and information technology for disabled individuals who were unable to communicate with others in the past can now enjoy all the benefits of education, expand their intellects and abilities which enable them to live their lives to the fullest.

7 References:
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