

Research Article

Information Service Delivery to the Visually Impaired: A Case Study of Hope for the Blind Foundation Wusasa, Zaria (Nigeria)

¹A.T. Lucky and ²N.E.E. Achebe

¹Department of Library and Information Science, Ahmadu Bello University, Zaria, Kaduna State, Nigeria

²Department of Library and Information Science, University of Nigeria, Nsukka Enugu State, Nigeria

Abstract: This study investigated the information service delivery to the visually impaired. Persons in the vision loss encountered by persons with visual impairment which limits them from the opportunities to access information especially those available in print. Scientific and technological innovations have however brought about various information communication devices that can convert print to speech for them to hear and also convert print to Braille for them to feel. Other devices include computer, Internet, CCTV. This study also centers on meeting the reading needs of persons with visual impairment through various assistive technology devices which include Braille printer, low vision aid, screen reader to help them to achieve their academic career. The findings of this study are only applicable to the visually impaired in Wusasa, Zaria, but it may have some relevance to other visually impaired in the country. Recommendations were made with a view to improving on the information service delivery to the visually impaired persons.

Keywords: Assistive, braille, disabilities, impaired, imperative, inaccessible, magnifying monitor, succor, synthesis

INTRODUCTION

Information service delivery to the visually impaired is an indispensable factor in interaction, growth development and progress in the life of living creatures, especially human beings. Information service is an exchange of information about ideas, feelings, attitudes and beliefs between sender and receiver, information delivery has both audio and audio-visual dimension, that is to say one can actually communicate without visualizing. On the other hand one can visualize without talking and still communicate to classes of human beings. Information service delivery to the visually impaired includes, the deaf, dumb and visually impaired. With other advance science and information service has been in growth and development of human interaction and civilization is worth appreciating. Information services delivery to visually impaired also requires the use of computer and telecommunication, analysis, processing manipulation, storage retrieval, transmission and communication of data in different forms which may include global explosion of information and knowledge. The background of this study is that visually impaired traditionally read Braille, Tape, Audio-Book and large print books produced and provided by specialized service for visually impaired. New technologies have opened up new areas of reading. Participation and activities for people with disabilities that were

inaccessible, only a few years ago, visually impaired can have access to computer programmed, internet and digital resources using Braille displays screen magnifying monitor, scanning software with OCR, screen readers and speech synthesis. These electronic aids are named assistive or adoptive technology.

Information services delivery are supplied in public libraries, not only in the visual specialized libraries. The accessibility of internet and digital resources has been recognized as a barrier for those who access information using adoptive technology. People who are visually impaired need to be provided with a range of ways of meeting information needs as are available for people with normal Sight (Williamson *et al.*, 2000). The research gave considerable emphasis on the information seeking behaviors of people with visual disability and involved the role of internet in order to provide specific online services for people with disabilities. In some way, in Italy there is a centralized information service for the production of alternative formats by the services for the visually impaired, the important or common points that can be found in information services are as follow:

- Information services for visually impaired people vary from country to country but usually blind have the central role in serving.
- Generally they are developing services with low-status, low-budget and unprofessionalism.

Corresponding Author: A.T. Lucky, Department Library and Information Science, Ahmadu Bello University Zaria, Kaduna State, Nigeria

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- In most countries their information services are not even a part of the local or nation.
- Their principal role is in the production of accessible formats (Braille, audio electronic texts and large print).

The general concept of hope for the blind foundation was initiated by Bitrus Gani Ikilama to serve as a circle of support around blind people. The nonprofit offers counseling, records books on tapes, Braille transcription and gives scholarships as well as vocational training. Hope for the blind-trust; a foundation which was founded in 1972, 40 years ago, with the support of some friends to provide succor and direction for the blind.

It started as a tape recording service centre for the blind and has since evolved to become a multi-purpose. Institution geared at addressing the needs of blind people and making them functional members of the society. From a simple vision of recording volumes of books including religious texts in tapes so that blind people could listen and learn.

Hope for the blind foundation started in Wusasa, Zaria which has created a brand new world for which many beneficiaries would internally be grateful to Dr. Gani Ikilama. They include those who have had their sight restored through operations that the foundation routing carried out with the help of volunteer eye surgeons from abroad.

For the blind in Wusasa, Zaria the world wide web came through the commitment of one blind man to prove that the blind have a better deal than begging or making mats for that which would never be used by the sighted. Pay a visit to the hope house, there waits a lesson on who true heroes are and who are truly blind even when they have eye and sight.

STATEMENT OF THE PROBLEM

Information service delivery to the visually impaired has been recognized as the driving force and primary gadgets for almost all progressive initiative that rely on knowledge based and skills oriented development activities in all spheres of human Endeavour's.

It thus becomes imperative that visually impaired individuals should not be left out of these great opportunities. This equal access for individuals to partake in ICT training and the use of ICT for information processing should be made intensive irrespective of physical status. In the era of globalization therefore, there is urgent need for advanced countries to assist by financing the manufacturing companies to enable them produce adoptive/assistive technology. Therefore, it is very imperative that individuals with visual impairment nurse personal overt and covert problem that need both ICT training and guidance counseling services that

would enhance their skills for attaining high academic performance with their able-bodies. Visually impaired person could only gain from the world of learning if provided with and made accessible to adequate T and ICT. But the borne of contention is the individual in Wusasa, Zaria, has possessed the following disturbances which include:

- Inability to personally access information on first hand basis
- Inability to personally search for materials on the internet
- Inability of having direct opportunity to operate computer sets
- Inability to process information and analysis such information taken directly from the internet for their research or academic work

It is against this background that the research has carried out a research to find possible solutions to the existing problems.

Information services for visually impaired: The concept of visual impairment has been defined variously by many people (both experts and non-experts). Their individual definitions are however tailored to their professionals or fields of knowledge. There is likely to be a wide difference in the definitions of visual impairment given by a medical practitioner to that of a special educator.

Information has been observed as knowledge communicated to the recipient. Information may also be seen as a processed data into a meaningful form that is understood by the user. Information service can be viewed as messages opinions facts, ideas, symbols, signals, images and processed data that are capable of increasing the knowledge.

Popoola (2007) defined information as that which reduces the user's level of uncertainty in a particular decision-making. Thus there is often the need for individual to obtain timely and relevant information. Information organized and distributes all expression of knowledge and free information service is the foundation of democracy, citizenship, economic and social development, scholarship and education in a progressive society.

G8 Summit in Japan recognized that information and information technology are potent forces in shaping the 21st century and recognized the importance of information and technology in bridging the divide. What is held as good for all society is good also for visually impaired people everywhere. But the challenges are enormous. Eighty percent of the world visually impaired people live in the third world. Most are illiterate and have no access to information.

World Health Organization (WHO, 2000) opines that if 180 million people who are visually impaired are

a big number, locally this represents a small, scattered population. So many countries will continue to identify the need of information to the visually impaired.

According to IFLA/UNESCO and Public Library Manifesto (1994) information is a gateway to knowledge that provides a basic condition for lifelong learning, independent-decision-making and cultural development of the individual and the society. An informed mind is an enriched mind and if one is not informed he will be deformed for his-to-day living. However, most information needed is often recorded either in books, tapes, diskettes, magazines often kept in information centers and libraries.

Information needs for visually impaired: Shon (1999), visually impaired persons exhibit a spectrum of special needs as a result of their sensory limitations. The range of such needs is manifested in the series of differences demonstrated by the person's abilities, attitudes, learning styles and motivation. The number of individuals with visual impairment is growing, most of who demonstrate various development, postural and behavioral problems. Developmental delays in locomotion, cognitive and social skills.

McCarthy (2002) views that not only visually impaired need access to an adequate collection of materials they need to learn information literacy skills as well. Many do not receive even rudimentary instruction in area such as the arrangement of the library, the library classification system. Dewey or LC or even the differences between fiction and notification.

Visually impaired students must learn how to utilize a wide variety of resources both print resources in the library and on-line resources including the internet and periodical database. Just as their sighted peers do. In order to allow visually impaired students to use materials that are available only in print, they might need access to an optical scanner and optical character recognition programme such as omri page pro, open book or a CCTV for low vision students. It is important to have at least a small browsing collection for the visually impaired students in the library. Many school libraries, media centers have a small collection of audio books, listening library and Record books have excellent books that can benefit the students. If the library is automated, assistive technology as JAVA'S, Zoom text should be loaded on a computer. Many automated library catalogues can be used to give access to the visually impaired students to search for library materials.

What are the information needs of the visually impaired and in what ways are those needs being met? What is the role of the internet and digital information in meeting their needs, what are the barriers to use nanotechnologies and access the computer and the web? A literature search revealed a poverty of studies about information need and information seeking behaviors of this group of people. Williamson (1998) explored both information needs and the preference for sources of information in 202 older people many of

which had visual disability. It formed that the most important information need are media sources, newspapers, television, radio frequently used have direct contact with them.

The University of Alberta (Canada) survey of the information needs of visually impaired citizens in the province of Alberta revealed that they have their conceptual framework based on studies which have emphasized the need to explore information seeking behavior or activities.

THE USE OF INFORMATION COMMUNICATION TECHNOLOGY FOR VISUALLY IMPAIRED PERSONS

According to MBA (1995) views persons with visual impairment as a group of individuals in the community who are regarded as non-contributing members due to defective condition of the eye as a result of accident, illness, environmental disaster and hereditary or congeal factors. They are always derogated as dependent class in the society. The members of the family and community usually deny of their rightful position by not given then the appropriate education and skills needed. Some of them who find themselves in educational system lack facilities that will enhance their learning.

The vocational rehabilitation programme of the visually impaired cannot be realized without adequate equipment and professionals. This implies that vocational skills are learnt through demonstrations and practice with appropriate devices that are fashioned to meet the needs of the trainees. Many vocational centers in Nigeria cannot boast of sufficient professional and devices that will bring out potentials of the children with visual impairment. Conservently there is lack of awareness on the use of information technology devices in many of the vocational training centers.

Information technology according to Abosi and Ozoji (1985) has expanded the acquisition of information, skills and communication across the globe. The electronic technology has touched every sector of human Endeavour. This has made the world a global village. Various devices are designed electronically to meet the needs of the users. The promotion of information accessibility as well as development of assistive technology has made information access easier for them.

Just like the sighted, the visually impaired can use many of the ICT facilities independently if necessary accessibility devices are put in place. Runswew (2006) posits that prime among the ICT facilities that are beneficial to the information needs of the visually impaired include:

- Kurzwell reading Machine
- E-mail (Electronic Mail)
- Fax (Facsimile transmission)

- Computer
- Video conferencing
- Internet
- World Wide Web (WWW)

Kurzweil reading mechine: Kassim and Maduagwu (2006), opines that the Kurzweil reading machine is a major reading devices for the visually impaired. This machine produces direct speech output from printed texts using electronic device. It enables the blind to have direct access to materials in print. The latest discovery of this includes larger memory automatic constructions, multilingual capacities of texts in several language and communication interface. It can also produce the recorder version of the text which can be transcribed into Braille materials.

E-mail (electronic mail): It is the transmission of electronic message between computers via a network. A variety of them as images, sounds, spreads sheets are attached to any E-mail sent which meets the information needs of the visually impaired. They can communicate and send electronic mails to their friends across the globe.

Fax (facsimile transmission): It is a system of communication by which electrical transmission of printed and written materials or drawing known as fax is achieved by radio, telephone which meets the educational needs of visual impaired.

Computer: It is electronic devices that can receive a set of instructions of programmed and then carries out these instructions by manipulating other forms of information.

Video conferencing: This could be regarded as e-education. It is a method whereby academic debates or discussion can be held between people of like minds at different places in the world with the help of computer and telephone. It can be performed using a mixture of voice recognition and text messaging from mobile telephone which is good in meeting the information needs of the visually impaired people.

Internet: It is computer based global information system used in sharing information among people.

World's Wide Web (WWW): This is also computer bases network of information resources that combines text and multimedia. It is used to access information.

Meeting the reading needs of persons with visual impairment through assistive technology: Scholl (1986) defined this as “the process of constructing meaning through the dynamic interaction among the

readers existing knowledge, the information suggested by the written language and the context of reading situation”.

The World Encyclopedia (1992) in Adesina (2007) reported that people in many countries of the world read for various reasons. Some read for pleasure, other for information, students read to pass their examination while some others read for fun. Reading can also be defined as “a skill or activity of getting information from books, that is, an occasion when something written (literacy work) is spoken to an audience.

The assistive technology devices include:

- Screen reader
- Braille translation software
- Braille writing equipment
- Closed-circuit television
- Braille embosser
- Scanners

Screen reader: Software program that works in conjunction with a speech synthesizer to provide verbalization of everything on the screen including menus, text and punctuation. It gives persons with visual impairment direct access to the world of print. It also creates independence in reading to the visually impaired. It helps a blind person to read freely at his/her own pace without assistance.

Braille translation software: Translate text and formatting into appropriate Braille characters and formatting.

Braille writing equipment: Used for creation of paper Braille materials can be manual or electron devices.

Closed circuit television: Magnify a printed page through the use of a special television camera with a zoom lens and displays the image on a monitor.

Braille embosser: A Braille printer that embosser’s computer-generated text as Braille on paper.

Scanners: Device that convert an image from a printed page to a computer file. Optical Character Recognition (OCR) software makes the resulting complete file capable of being edited.

With the help of ICT, the visually impaired have been rendered special attention to fully participate in the world by providing them with best possible support necessary to bridge gaps between accessibility and literacy. More importantly, careers in science are now within the reach of the visually impaired and some of them have become successful in many scientific fields, including engineering, physics and chemistry.

Table 1: Distribution of respondents by gender

Response	Frequency	(%)
Male	35	70
Female	15	30
Total	50	100

Table 2: Marital status

Response	Frequency	(%)
Married	30	60
Single	10	20
Widow	5	10
Divorce	5	10
Total	50	100

Table 3: Educational status

Response	Frequency	(%)
Primary school certificate	30	60
Secondary school certificate	20	40
National diploma certificate	-	-
National certificate in education	-	-
B.Ed, B.Sc...	-	-
Total	50	100

Table 4: Training experience

Response	Frequency	(%)
6 months	10	20
9 months	20	40
12 months	20	40
Total	50	100

From Table 1, 35 respondents representing 70% are males. Fifteen respondent representing 30% are females. This shows that males are more in number at the Blind Centre.

From Table 2, 30 of the respondents representing 60% are married. Ten of the respondents representing 20% are single. Five of the respondents which representing 10% are widows while 5 of the respondents representing 10% are divorcee. This shows that respondents that are married are more at the blind centre.

The Table 3 shows that 30 respondents representing 60% have primary school certificate. Twenty respondents representing 40% have secondary

school certificate. None of the respondents have National Diploma Certificate, while none of the respondents have National Certificate in Education and B.Ed or B.SC at the blind centre.

The Table 4 shows that 10 respondents representing 20% are trained under 6 months. Twenty respondents corresponding to 40% were trained under 9 months. Twenty respondents representing 40% were trained under 12 months.

Table 5 shows that (15, 30%) agreed that the visually impaired use textbooks to get in information. (20, 40%) strongly agreed that it is better for the visually impaired to use Braille to get information. (10, 20%) disagreed with notebooks as available source. While (5, 10%) respondents strongly disagreed with computers as a source of getting information. The table shows that (30, 60%) agreed that visually impaired have the problem of personally accessing information from the internet. (13, 25%) strongly agreed. (5, 10%) disagreed while (2, 4%) strongly disagreed. ICT facilities available for visually impaired (25, 30%) (8, 16%) strongly agreed that computers were available while (10, 20%) disagreed and (7, 14%) also strongly disagreed.

Visually impaired cannot use ICT facilities available. This is evidence when all the respondents ticked No. this means that none of the respondents can use ICT facilities. The table shows none availability of ICT resources for visually impaired (21, 42%) agreed to the statement while (23, 46%) strongly disagree. Therefore (6, 12%) disagreed while zero (0) of 0% strongly disagreed. The table shows that (19, 30%) agreed that the visually impaired have the problem of accessing information and analyzing it from the internet. (32, 64%) strongly agreed (5, 10%) disagreed while (4, 8%) strongly disagreed.

From the table no respondent agreed that the visually impaired have access to computer programmed. And no responding strongly agreed.

Table 5: Visual impaired and ICT

Questioning items	Agree		Strongly agree		Disagreed		Strongly disagreed	
	Frequency	(%)	Frequency	(%)	Frequency	(%)	Frequency	(%)
Visually impaired use one of these to get information: braille, computer, textbook and notebook	15	30	20	40	10	20	5	10
Visually impaired have the problem of inability to personally access information from internet	30	60	13	26	5	10	2	4
The type of ICT available for visually impaired include computer and the internet	25	30	8	16	10	20	7	14
Visually impaired can use ICT faculties	-	-	-	-	-	-	-	-
No availability of ICT resources for visually impaired	21	42	23	46	6	12	-	-
Visually impaired have problem of inability to access information and to analyses it from internet	19	38	32	64	5	10	4	8
Visual impaired have access to computer programmed	-	-	-	80	9	18	41	82
Information need of virtually impaired is met through assistive technology	14	28	36	72	-	-	-	-
Visually impaired make use of braille with little difficulties	13	26	37	74	-	-	-	-

(9, 18%) of the respondents disagreed while (41, 82%) strongly disagreed with the statement. The table shows that (14, 28%) agreed that the information need of the visually impaired is met through assistive technology (36, 72%) strongly agreed while no respondent ticked disagreed and strongly disagreed. From the above table, (13, 26%) agreed that the visually impaired make use of Braille with little difficulties. (37, 74%) strongly agreed. None of the respondents disagreed or strongly disagreed.

RESULTS

The study investigated the information service delivery to the visually impaired people. A case study of Hope for the Blind Foundation, Wusasa, Zaria. Seventy respondents were involved in the data gathering. The questionnaire was used in collecting data from the respondents. About 50 questionnaire were distributed out all were returned. The null hypothesis were subjected to statistical table, the detailed analysis of data from the use of these instruments was presented in chapter four.

This study summarizes that, with the help of ICT, the visually impaired have been rendered special attention to fully participate in the world by providing them with best possible support necessary to bridge gaps between accessibility and literacy. More importantly career in science are now within the reach of the visually impaired and some of them have become successful in information service.

CONCLUSION

The loss of vision seriously inhibits persons with visual impairment from accessing very useful information, especially those available in print. However, information communication technology has been found very significant in proffering solution to this problem. Its relevance in improving access to information for persons with visual impairment cannot be under estimated. ICT has brought about the conversion of most information available in print to speech, through voice activation device, print character have also been converted to Braille characters, which can be read. Despite the benefits of ICT, its successful application still has to contend with challenges of users technical knowhow.

RECOMMENDATIONS

In the light of the numerous benefits of information communication technology to persons with visual impairment and its roles in meeting their information needs, the following recommendations are met:

- Government should make a commitment that anybody who is visually impaired have the right to be taught Braille.

- The government and voluntary organizations should assist in making ICT equipment available to persons with visual impairment at subsidized rates.
- Public and school libraries should Endeavour to install basic ICT equipment for the use of persons with visual impairment.
- Administrators should ensure that employ teachers with solid Braille literacy skills to teach the visually impaired learners.
- Schools for the blind should be built and well equipped with technological devices.
- The Universal Basic Education (UBE) should be practically extended to them, that is training centre should be provided for them and training made compulsory for all visually impaired people.

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