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ICT Tools as Provision for Information to the Visually Impaired Persons in Lagos State Special Libraries

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Abstract

The rapid development in technology has transformed all spheres of life. Information Communication Technology has revolutionaries the accessibility and use of information resources in the contemporary world. However, people who are visually impaired encounter challenges in accessing information resources and services in the libraries especially ICT and it is as a result of their customised library collections being mostly in Braille formats. Provision of ICT tools for the visually impaired has received tremendous attention all over the world. Information resources for the visually impaired are converted into formats that are usable to them; these formats include Braille, talking books/audio recordings and large prints to meet their information needs which are the manual format of information source. The study adopted a descriptive research design. Total enumeration sampling technique was used. Data were collected with the use of a structured questionnaire that was converted into Google form on ICT Tools as Provision for Information to the Visually Impaired Persons in Lagos State Special Libraries. The population of this study comprised of 104 of all the visually impaired using the two special libraries in Lagos state. Frequency counts, percentages, mean, standard deviation, were used to analyse the data. The result shows that the Assignment, Health and Scholarship are the major information needs of Visually Impaired Persons. The result also show that Speech synthesis (x = 1.92), Computers (x = 1.92) was ranked highest majorly, Internet connectivity (x = 1.81), speech-to-text engine (x = 1.75) and Retina implant (x = 1.09) were ICT tools available for the visually impaired. The result also show that lack of marketing of library services to the visually impaired, inadequate funds to acquire individual ICT tools and Lack of awareness were the major challenge encountered by Visually Impaired students. In conclusion Libraries meant for people with special needs should provide enough ICT tools to the visually impaired to meet their needs. Recommended that library should train staff on how to assist the visually impaired persons on the usage of the ICT tools available in the library. Library should make available ICT tools visually impaired students.

Keywords: ICT Tools, Information, Visually Impaired Persons, Lagos State, Special Libraries

Introduction

The rapid development in technology has fundamentally changed almost all the spheres of life; as such Information Communication Technology has reshaped the accessibility and usage of teaching, learning and research. People who are visually impaired encounter different challenges in accessing library and information services mostly ICT and it is as a result of their customised library collections being mostly in Braille formats. The growing numbers of technology-enhanced and sophisticated assistive devices that are made available to people pose numerous challenges in accessing and using them.

Provision of ICT tools for the visually impaired has received tremendous attention all over the world since Louis Braille modified an earlier invention of Charles Barbier to produce Braille in 1892. Information resources for the visually impaired are converted into formats that are usable to them; these formats include Braille, talking books/audio recordings and large prints to meet their information needs which are the manual format of information source.;

Talking books: are audio recordings on tapes, cassettes and compact disk from books and other materials which the visually impaired can listen to, thereby providing the opportunity of reading through listening to the visually impaired. Screen magnifier: this ensures productivity in touch and control. It reads aloud, characters and words as you type, boosting confidence and accuracy. It reads voice naturally, describe documents or email or webpage and also scan and read paper document. Voice recognition machine or program assists to receive and interpret dictations or to understand and carry out spoken commands. In addition, Braille embosser device can generate print materials using the Braille writing system for the visually impaired user.

The rapid growth of ICT has greatly impacted the process of information provision to the visually impaired such that, ICT is seen to be synonymous with development. Minishi-Majanja (2007) refers to ICT as a "powerful enabler of development" due to its significant impact on the economic, educational, social, political, cultural and other spheres of life. Information and Communication Technologies (ICTs) are tools that facilitate the production, transmission and processing of information (Kemy, 2011). Information resources made available to the able-bodied on daily bases is expected to be provided for the visually impaired by the society, most importantly the library should make provision for the visually impaired to improve their relevance in this 21st century.

Among the ICT-enabled resources for the visually impaired are screen reader software (such as Windots, JAWS (Job Access with Speech for Windows), Screen magnifiers for low vision, screen synthesis, voice recognition, information sonification and lots more. Further classification of these tools include: computer software resources (online databases, CD-ROMs, library application software, Internet and storage media); computer facilities (computers, scanners, printers, UPS and power point projectors; photocopiers; disk (VCD), digital cameras, video compact digital video disk (DVD) radio, television, audio tapes, video tapes and satellite connection, communication media (telephone-intercom and global system of mobile communication (GSM). Generally speaking, ICTs comprise of hardware, software, networks and media for processing, transmission and presentation of information.

Library is an open place for the citizenry irrespective of sex, ethnicity, creed, status, age, qualifications, or political leanings, ICTs has tremendously impacted on library services in developed countries. IFLA (2001) postulated that "the development of collections should be based on the ideas of access for all which include access to formats appropriate to specific user groups, e.g talking books and Braille for blind people." IFLA further stated that the visually impaired are faced with lot of challenges as they seek to assert their position in a modern and competitive world dominated by able-bodied persons. Libraries for the visually impaired in Nigeria are faced with problems of meeting the high demand for information materials in alternative formats. However, adequate alternative formats were made available, obsolete facilities for transcription and provision of information material for use. The consequence of these is that, visually impaired persons who seek information are provided with what is available and not what they want to read (Adetoro, 2009).

Statement of the problem

The basic skills and techniques to overcome visual impairment are many and varied and require discreet knowledge, a thorough understanding of visual impairment and its attendant problems. The study focused on ICT tools as provision for information to the Visually Impaired Persons in Lagos State Special Libraries, Nigeria. It was observed that libraries are not equips with the ICT tools that will assist the visually impaired students. It was also notice that ICT tools which are Screen magnifiers, Speech synthesis, Voice recognition, Internet connectivity, Multi-sensory software, speech-to-text engine, Computers are not available in some of these libraries. The

special libraries in Lagos state are INLAK and Anglo-Nigerian Welfare Association for the Blind (ANWAB) that was covered were not doing enough to assist the visually impaired in the contemporary world that is saturated with internet.

Research Question

1. What are the information needs of the visually impaired users of special libraries in Lagos States?
2. Identify the ICT tools available for the visually impaired users of special libraries Lagos Oyo state?
3. What are Challenges encountered in the accessing ICT tools available to the visually impaired?

Literature review

Historically, people have feared visual impairment more than almost any other physical disability. In some years back, Acquired Immune Deficiency Syndrome (AIDS), Cancer and Alzheimer's and most recent Ebola diseases have become more feared in industrialized nations because massive publicity has brought them to the forefront. The dismay of visual impairment is based on two components: the extent to which we rely upon vision as our primary sense, and the negative images about visual impairment which are almost universal throughout the world. The required for distinguished, intensive services more entails than in dealing with the effects of visual impairment. The fundamental skills and capability to overcome visual impairment are many and varied and require discreet knowledge, a thorough understanding of visual impairment and its attendant problems. Dealing with individuals with visual impairment requires that the trained personnel understands, read and write in their preferred mode of communication which is Braille. Visual impaired person must be someone who can read and use Braille in communicating with these people. Braille range from a clear alphabetical symbols to specialized notations for computers, foreign languages, music, mathematics and other disciplines. intruction in reading and writing Braille, the individual will be in better stand to use assistive technology, including screen review software such as JAWS; scan and read systems such as Open Book and Kurzweil 1000 and possibly portable note takers such as Braille Lite series, Braille 'n speak,

Type ‘n speak etc. to effective and efficient communicate with them and also using that to provide them with the requisite information timely.

Georgia Tech surveys (GVU, 2008) pointed about 8% of Web users has a disability, and nearly half of them are blind or visually impaired. Creating Web documents and sites that are accessible to the visually impaired student should therefore be an important objective for library and information centers in improving their Web-based information. There are numerous courses on the Internet; therefore it is important to review the effectiveness of this online resource for the visually impaired student. However, not only do people have to navigate their way around the Web, but the Web pages they encounter are likely to contain graphical images, and are laid out in ways that make design sense. Addition, document made up of a great extent of text, readability issues come rapidly into play (Nielson, 2000); where a document includes graphics, accessibility issues become more significant, though even poorly designed text can prove troublesome for visually impaired people.

However, providing information services to the visual impaired, Information and Communication Technology (ICT) plays a crucial role in locating and accessing of information, scanning, translating and printing materials in appropriate formats through the use of divers Devices. ICT applications in Libraries in this century have ease and promote quick and timely access to Library and Information services specifically for the visually impaired. YU and Davies (2002) opined that Information through technology has increasingly become a necessary tool to success and the source of opportunity in Education and Employment. Bell and Peter (2005), postulated that in the 21ST century, talking book Library and Mainstream Library are teaming up to use technological Innovation to deliver cutting edge services, programs and a wide variety of electronic books to ensure that People with Visual Impairments have the same access to library material and services as their Sighted counterpart. Libraries adoption of Information and Communication Technology in all Operations and Provision of Services to the Visual Impairment should be gamine since it has brought about changes in her method of information storage, retrieval and transmission.

Library and information centers around the world have developed specialized information services to meet the library and information needs of the visually impaired users which include, Braille books, which is a system of reading and writing where raised dots are used to represent

letters which are read by touch; Talking books, which are audio versions of books that could be recorded on cassettes, CD-ROM, DVD, internet resources, e-books which are often preferred by majority of the visually impaired; Talking newspapers; Large printed materials in form of documents printed in large fonts for use by partially sighted users; and Electronic Texts, in form of computer text-files (Rayini, 2017).

Also, libraries are taking the privilege of ICTs in increasing information access to the visually impaired using a broad range of ICTs otherwise called adaptive or assistive technologies which are now available to give access to information through electronic databases and on the internet, giving blind users equal opportunity as the sighted. These assistive technologies (ICT tools) include: Screen magnifiers, Screen readers, and Voice recognition software. According to Belay (2005), these ICT tools have helped to alleviate the information problem of visually impaired persons and improve their functional capabilities. Similarly, previous studies (Gerber, 2003; De Azevedo, 2002) have shown that assistive technologies help people with disability to enjoy a more fulfilled life. Libraries providing information materials for the visually impaired in Nigeria are public libraries, libraries of Non-Governmental Organisations (NGO) and libraries in educational institutions (Primary, Secondary and Tertiary institutions).

Visual impaired Persons in Nigeria, being mostly uneducated, suffer double disadvantage because they become more dependent and isolated from the educational, social and cultural life of the community (Obani, 2002). Atinmo (2002) posits that educational opportunities for all impaired persons are limited to provision of training of teachers of the impaired at primary. Current practices in the education of persons with visual impairment seem to suggest that the visually impaired are generally put at disadvantage in teaching and learning situations. Persons with visual impairment among other categories of disabled persons in Nigeria lag behind in having adequate, relevant and accurate information (Onwuchekwa, 1999). She adds that among the visually impaired, the blind are regarded as the lowest in hierarchy. Their disability makes access to information difficult.With regards to information provision, library services are generally rated low. Information materials such as Braille, large prints, audio-recordings and electronic resources are scarce and cannot meet the needs of persons with visual impairment (Agbaje 1996; Basharu, 1998).

Methodology

The study adopted a descriptive research design. The design enabled the researcher to collect data from respondents to investigate the ICT tools available for the visually impaired using special libraries in Lagos State, Nigeria. The population of this study comprised of 104 of all the visually impaired using the two special libraries in Lagos state. Total enumeration sampling technique was used. Out of the 104 administered instruments, 97 of the instrument were retrieved giving a response rate of 93.3%.Questionnaire was converted into Google form to test their level of exposure and inclusion to the technology era. The instrument was into 3 sections. Section A is to identify the Information needs of the visually impaired Lagos State; Section B is to identify ICT tools available for the visually impaired using special libraries Lagos state; and Section C to know what Challenges encountered in the accessing of the ICT tools available to the visually impaired. Data gathered were interpreted using descriptive and inferential tools.

Data Analysis

Demographic information

Frequency distribution of respondents by gender

Gender	Frequency	Percentage
Male	58	55.8%
Female	46	44.2%
Total	104	100

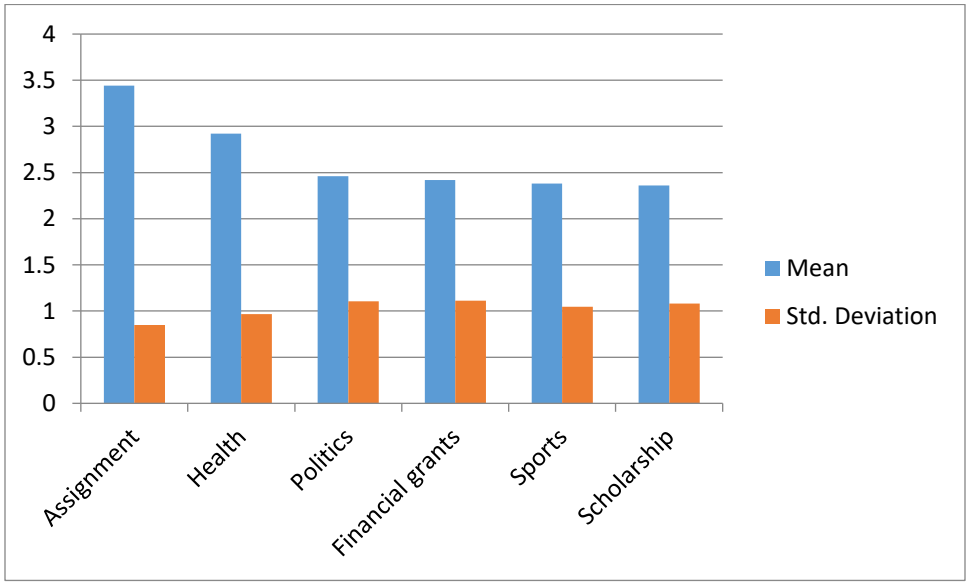
Table 1: shows the demographic information of respondents of the study, namely gender. The table reveals that, 58 (55.8%) of the respondents are males and 46(44.2%) are females among the respondents of this study. The results on demographic information of visually impaired showed that there were more males than their female counterparts.

Information needs of the visually impaired Lagos State

To find out the information needs of the visually impaired using the special libraries in Lagos State, results show that Assignment is ranked highest information need followed in succession by Health, while the least is Scholarship (x = 2.36).This is in consonance with Appiah (2017) who

found that academic, employment and health information were the information needed by visually impaired of the two universities in the research findings.

Table 1: Information needs of the visually impaired Lagos States



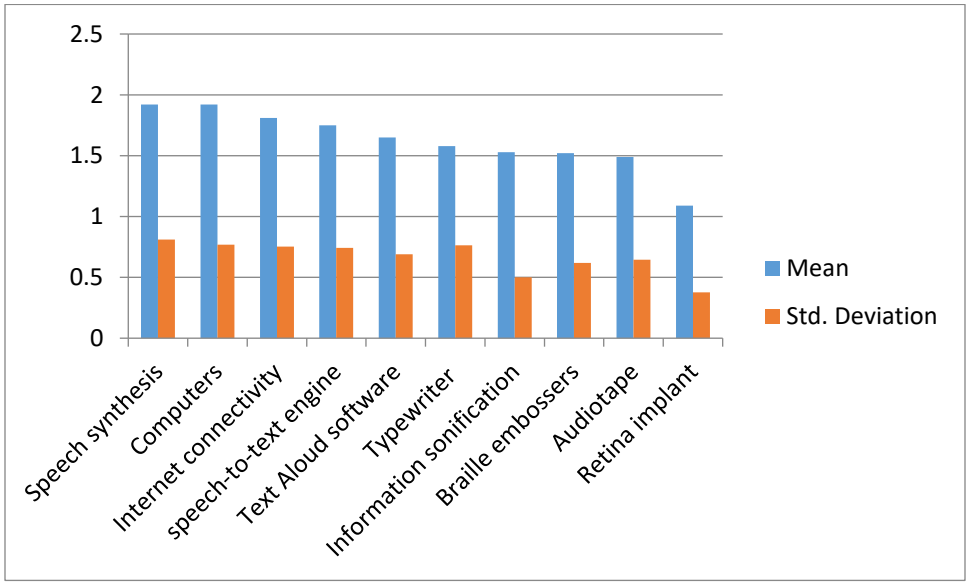
ICT tools available for the visually impaired using special libraries Lagos state

The ICT tools available for the visually impaired using special libraries in Lagos States were identified. Using the mean and standard deviation, the ranks are stated as follows, “Speech synthesis” (x = 1.92) and “Computers” (x = 1.92) was ranked highest majorly available ICT tools in the libraries, and were followed in succession by, “Internet connectivity” (x = 1.81), “speech-to-text engine” (x = 1.75) and “Retina implant” (x = 1.09) were 2nd, 3rd and least respectively. The inference drawn from this finding was that Speech synthesis, Computers, speech-to-text engine, and Text Aloud software are the most available ICT tools in the examined libraries.

The findings agreed with Lucky and Achebe (2012) who listed the most important ICT facilities that are beneficial in learning for the visually-impaired as the Internet, the Kurzwell Reading

Machine, the World Wide Web (WWW), Computer, and Video conferencing. In addition, the use of various AT devices such as Screen reader, Braille translation software, Braille writing equipment, Closed Circuit Television (CCTV), Braille embosser and Scanners for visually impaired people are important to support learning and Ajobiewe (1999) who also stated that the provision and use of alternative format and availability of reading aids and transcription services in libraries will go assist in making information usable to visually impaired users in Nigeria.

Table 2: ICT tools available for the visually impaired using special libraries Lagos Oyo state



Challenges encountered in the accessing of the ICT tools available to the visually impaired

Results of the responses of the visually impaired users of special libraries in Lagos States indicated 10 major hindrances to accessing ICT tools. Lack of marketing of library services to the visually impaired, inadequate funds to acquire or procure individual ICT resources and Lack of awareness of the importance of the tools were the major challenge encountered.

This is in tandem with a similar study conducted by Eligi and Mwantimwa (2017) which revealed that visually-impaired people face some limitations such as inadequate ICT tools and power supply in usage of ICT facilities to enhance the quality of their learning experience. The exigency for continuation in providing learning and research opportunities for the visually-impaired and the provision of technologies have added value to learning and research activities in the institutions. Also with Adetoro (2010) also finds out that resources and availability of funds are critical to improving information services provision to the visually impaired in special libraries in Nigeria.

Table 3: Challenges encountered in the accessing of the ICT tools available to the visually impaired

Challenges encountered in accessing of the ICT tools	SA	A	D	SD	x	SD
Lack of marketing of library services to the visually impaired	63	27	2	5	3.74	.687
Inadequate funds to acquire or procure individual ICT resources	48	24	18	7	3.70	.597
Lack of awareness of the importance of the tools	64	17	9	7	3.54	.754
Lack of effective ICTs training provision to the visually impaired	81	9	3	4	3.45	.813
Poor internet connectivity	45	18	30	5	3.27	.912
Lack of assistance from the librarian	60	24	9	4	3.16	.965
Outdated ICT tools	45	34	13	5	3.16	.887
Lack of time	57	12	27	1	3.14	.871
Non-availability of suitable computer software, such as JAWS, Zoom Text etc.	45	35	9	8	3.10	.934
Obsolete maintenance of the tools by VIP	7	17	5	1	3.06	.977

Weighted mean 3.33

Key: SD= Strongly Disagree, D= Disagree, A= Agree, SA= Strongly Agree

Discussion of findings

Conclusion

The study concluded that assignment, health, politics and financial grants were the major purpose of information sourcing among the visually impaired users of special libraries in Lagos and Oyo states. The most available ICT tools in these libraries are internet connectivity, computer, speech-to-text and speech synthesis. Lack of marketing of library services to the visually impaired and inadequate funds to acquire or procure ICT resources were the major challenge confronting visually impaired persons in accessing the special libraries.

Libraries meant for people with special needs should provide enough ICT tools to the visually impaired to meet their various needs; basically tools that would meet all their spheres of need not just education. Libraries of people with special needs; specifically the visually impaired should train the library staff and visually impaired persons on the usage of the ICT tools available.

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