Information Provision for Students with Visual Impairments in Nigerian Universities: Charting a Course from Project to Service Delivery

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Purpose: *There is paucity of data on the experiences of students with visual impairment (SWVI) in the usage of library information resources and services in Nigerian university libraries. This article examines the extent of information provision for the SWVI in the University of Lagos with a focus on the outcomes of the Braille Project funded by a non-governmental organisation to meet the information needs of the SWVI.*

Design: *The article is based on a case study of the University Library service mechanism to develop a sustainable information service for meeting the needs of the SWVI. The data used for this article were derived from a systematic review of the relevant literature and 35 in-depth interviews among the SWVI at the Soroptomist Braille Centre, University of Lagos. The data obtained from the interviews were subjected to content analysis and ethnographic summaries.*

Findings: *The findings revealed how the library is currently meeting the information needs of SWVI through the use of innovative technology. The results also revealed that the following services were being offered by the library: regular meetings with a service staff, retrieval of materials from stacks, scanning and conversion of print request to CD-Rom, research assistance services; conversion of library orientation materials to braille, document delivery services; reference services, hold/track request services; online database search services; lending and inter-library loan services, and specific and general information literacy services. The library sustainability planning process developed to ensure an inclusion of the needs of the SWVI in the library service was discovered in the study.*

Research limitation/Implications:*This paper is a case study and not representative of a population. However, at the level of practice, the viewpoint article offers some tips which can be applied quite readily when charting a course for meeting immediate information needs of students with visual impairments in Nigerian universities.*

Originality/value: *This study has shown the outcomes of the efforts geared towards meeting the information needs of the SWVI in a sustainable manner through collaboration between the University of Lagos Library and a non-governmental organisation*

Keywords: *Library Services**; Information Needs; Information Resources; Student with Visual Impairment (SWVI); University of Lagos; Nigeria.***

Introduction

The term 'persons with visual impairment' implies all persons with a visual disability that cannot be corrected by spectacles. They include the blind, partially sighted or those who have difficulty reading an ordinary print and whose sight restricts their mobility. Estimates of the World Health Organization (2012) showed that there are 285 million persons with visual impairment worldwide, with the majority of them from the developing world. Therefore, students with visual impairment (SWVI) in any higher institution of learning deserve adequate attention from the librarians and information professionals. However, there is a paucity of reliable data on the information needs of the SWVI, the challenges facing them in the process of searching for information to meet their needs and the strategies for meeting their information needs in the university libraries in Nigeria.

Information plays a vital role in many students' lives. It is a key resource for the development of the society. The 21st century has been described as the era of information revolution with the presence of information bearing materials in diverse formats (Atak & Erturgut, 2010). As a result of technology advancement and changing attitudes of Nigerian students to learning, more students are searching for information in various formats to meet their academic and social needs. The same applies to the SWVI who also need adequate information services to support their learning, recreational, directional, and other needs.

For any librarian, a useful starting point may be to recognise that the SWVI need all kinds of information like fully sighted students. Surprisingly, many librarians usually make assumptions about the information needs of the library users but such assumptions may be at variance with the felt-needs of the library users. Like all other students, the SWVI may need information to support learning, write assignments, access quick reference information, check online catalogues, access full text articles for their independent research work or just socialize with friends.

Some researchers have shown that the information needs of the SWVI may also include the need to be sufficiently well informed and be able to participate fully in an academic community which will enable them make rational choices as students (Šehić &Tanacković, 2014).Therefore, an effective and efficient use of information by the SWVI is necessary to improve their academic performance. The kind of information they need must therefore be established and the most acceptable methods of providing such information must be put in place. What this group of students wants and what is acceptable to them should determine the criteria for information service provision in the library.

It is noteworthy that for the SWVI from a developing country like Nigeria, library service is a critical channel, which may be the only source of information. However, the SWVI may not get recorded or Braille literature from the library (Singh & Moirangthem, 2010). Thus, library could play a great role in fulfilling the information and educational needs of the SWVI.

It is against this backdrop that this article examines the extent of information provision for the SWVI in Nigeria with a focus on service delivery from a Braille Project at the University of Lagos, Nigeria. The specific issues addressed in this article include the information needs of the SWVI, the strategies used by the SWVI in the search for information in the library, and how the university libraries meet the information needs of the SWVI.

The Study Area

The study was conducted at the University of Lagos (UNILAG) given its position as a leading university with heterogenous population of students and staff from different parts of Nigeria. Also, the UNILAG is the national headquarters of the Association of the SWVI in Nigeria.

The UNILAG is one of the federal universities in Nigeria. It is a multi-campus university with a population of over 40,000 students and 5,000 members of staff. The main campus of the university is situated in Akoka, Lagos State, while the other campuses of the university are located at Idi Araba and Yaba in the Mainland Areas of Lagos state, Nigeria. The UNILAG is a famous university, which is always called the 'University of First Choice and the Nation's Pride'.

The UNILAG library has branches at different locations such as Akoka, Idi-Araba, and Yaba in Lagos state. To make information seeking activity most rewarding and enjoyable for the various categories of users, the UNILAG library has provided print resources and web-based information resources and services, including library websites, online-public-access-catalogs, electronic databases, electronic books, full-text journal articles, electronic reserve services, electronic suggestions services, hold request services, and institutional repository.

A good development at the UNILAG library was the establishment of a Braille centre within the library building extension by a non-governmental organization known as the Soroptimist International of Eko in 2010. The Braille centre was equipped with facilities for the transcription and production of any materials into either Braille or on Compact Disk to meet the academic needs of the SWVI. In 2015, the Soroptomist International approached the UNILAG library management to discuss the possibility of a transfer of the management of the Braille centre to the University of Lagos Library for expanded service delivery.

Current Status of Services to Students with Visual impairment

Personal experience suggests there is lack of access to library services that meet the needs of persons with visual impairments in Nigerian libraries. Presently, in most academic libraries in Nigeria, library services are planned without considering the needs of students with visual impairments, library resources are not acquired in a format that can be used or organized for easy access and retrieval, assistive technology are not available to explore and effectively use both print and electronic resources and library staff are not trained on special service delivery mechanisms for students with visual impairment. (Adetoro, 2011; Babalola & Haliso, 2011; Lucky & Achebe, 2013; Ekwelem,2013; Akolade, Tella,

Akanbi-Ademolake & Adisa 2015). The story is not entirely the same at the University of Lagos where the establishment of the Soroptomist Braille Centre provides skeletal services to support the students information needs. The main library currently provide students with visual impairment library services such as: regular meetings with a service staff, retrieval of materials from stacks, scanning and conversion of print request to CD-Rom, research assistance services; conversion of library orientation materials to braille, document delivery services; reference services, hold/track request services; online database search services; lending and inter-library loan services, and specific and general information literacy services. However, in spite of the current services the University of Lagos Library renders, students with visual impairment would rather use the Soroptomist Braille Centre rather than visit the main library for any information services. What could be responsible for the attitude of students with SWVI in the use of the University Library? Are Librarians making assumption about the specific information needs of these users? This study therefore examines the information needs of SWVI, with a focus on measures put in place to enhance access to library resources and services in the University of Lagos. This study is guided by the following research questions: (i) What type of information would students with visual impairment in Nigerian universities need?; (ii) What are the strategies used to access library resources, and difficulties encountered, if any?; and (iii) How best can Nigerian academic libraries meet the information needs of these specific user group?

Existing Studies on Information Needs and Information Provision for Persons with visual impairment.

The concept of information need has been subjected to various interpretations, which are complementary. Tester (1992) described it as the lack of appropriate information on which to base choices that could lead to benefits or services that may improve human well-being. For Moore (2000), the information need is a state or process when one perceived that there is a gap between the information and knowledge available to solve a problem and the actual solution to the problem. Moore (2000) added that it is a gap in a person's knowledge of not knowing where and how to obtain relevant and accurate information to satisfy their informational needs. The aforementioned interpretations imply that people seek, process, and absorb many different kinds of information and through this, become more or less well informed.

Studies have shown that the need for information is often understood as evolving from vague awareness of something missing and as culminating in locating information that contributes to an understanding of a given subject (Moore, 2000; Clough & Sanderson, 2013).

As observed by Fakoya-Michael & Fakoya (2015), an understanding of the information needs of various patron groups is essential in the planning, implementation, and operation of information system and services in work settings. Meanwhile, Luo (2011) observed that if librarians are to serve their community realistically, they need to recognise the changing needs and variations in information gathering of the end-users to be able to provide services that would be most useful to their needs.

In their study of the information needs of people with visual impairment in Australia, Williamson et al (2000) focused on people with visual impairment achieved their information needs, and the barriers they encountered in the process of meeting those needs. They also examined how blind senior citizen used the Internet to meet their information needs. The participants in their study obtained relevant information on visual disabilities, and how to get around in normal life situations. Furthermore, they obtained relevant information on health implications of visual impairment and the existing aids, equipment, services, and self-help groups. The other relevant information needs they obtained include health, income, finance, recreation, current affairs, and employment information (Williamson et al., 2000).

Some socio-economic factors including living alone or living with someone such as spouse, family member, and caretaker were found to influence how the participants obtained information needed to complete any tasks. Participants with the most in-home support did not need as much outside help while those living alone relied more on friends, relatives, and support agencies. Family and friends were the most often used sources of information, while radio was also mentioned as important sources (Williamson et al, 2000).

It is important to note that the information needs and sources of obtaining the needs for students

with visual impairment may be different from the observation reported by Williamson et al (2002) in their Australian study.

The information needs of students with visual impairment may vary, traditionally, they use braille, tape, talking book and large print books specifically produced for students with visual impairment. However, new technologies have opened up other windows of opportunity for this category of students to participate in the new information age which may hitherto affects the different types of information they may require to perform general and specific tasks. For example, Craven (2003), opined that students with visual impairment have specialized online information needs that are easily overlooked in traditional approaches to library service and research. Schuyler also explored the library experience of students with visual impairment and their use of library services, and described the approaches to the process of setting up library computers to access and use information. Majinge & Stilwell(2013) examined library services and the way students with visual impairment seek information, with special emphasis on the use of assistive technology in Tanzania, and concluded that libraries deployed appropriate assistive technology to improve information access to students with visual impairment to effectively use library resources.

The use of assistive technology for information seeking by students with visual impairment has been studied by several authors who found out that technology plays an important role in the information behaviour of students with visual impairment (Corn & Wall, 2002; Abner & Lahm, 2002,Tilley, Bruce &Hallam, 2007, Lucky and Achebe, 2013).

Therefore, one way to conceive the information needs of students with visual impairment is to identify the core needs that is concerned specifically with their specific need. Basically, it seems clear now, that online technologies and information services will become more and more prevalent and integral to the everyday lives of students with visual impairment. Therefore, ways must be found in which students with visual impairment can participate equitably in the information age.

Williamson et al (2002) opined that it is the responsibility of librarians, in particular, to try in every way possible to allow the participation of students with visual impairment and technology to occur. According to Luo (2014), Librarians are expected to provide well-sourced, dependable answers to user's questions; and ultimately increase their knowledge base, irrespective of their disability. Eldridge (1982) also reported that library service to persons with visual impairment is not as good as it should be. His interviews with library users with visual impairment, revealed that many people with visual impairment did not use libraries before losing their sight, and are even less likely to use libraries after becoming blind. He stressed that blind and low vision library users would like to be able to browse the stacks and make their own choices among talking or Braille books, unfortunately, many struggle to get this activities done with the help of their helpers. The researcher therefore recommended that librarians should develop creative ideas on how to improve library services to library users with visual impairment. The author concluded that such librarians should be trained in identifying the general and specific needs of users who have visual impairment (Eldridge,1982). Specifically, Majinge & Stilwell (2013) reported in their study that some academic libraries in Tanzania are systematically removing the barriers hindering access to information by providing information in accessible formats to students with visual impairment. According to Kiarie (2004) and Fakoya-Michael and Fakoya (2015)), information services for students with visual impairments also continue to expand and improve in Kenya.

However, the story is different from the studies of Babalola & Haliso (2011), Adetoro (2011), Lucky and Achebe (2013), Ekwelem (2013) and Akolade, Tella, Akanbi-Ademolake & Adisa (2015) who asserted in their studies that there is lack of library services that meet the needs of students with visual impairment in Nigerian university libraries because library collections are not acquired and organized with this category of users in mind. Therefore, the authors recommended that the libraries should not only acquire arrays of library print material to support learning but should also consider the variety of online resources including the internet and periodical databases to meet the specific and general needs of students with visual impairment.

From the review of literature, it is obvious that university libraries, particularly in Nigeria have not served students with visual impairment well enough. The story is not the same in other developing nations as this review has shown that

aside from large print and talking books, assistive technology are used to meet the need of students with visual impairment in Tanzania, Ghana and Kenya.

Methodology

This study was based on qualitative research design for better understanding of the research problem through first-hand experience, truthful reporting and quotations of actual conversations. The study sample comprised of students with visual impairment of the University of Lagos. Using purposive sampling methods, respondents were selected based on their identification within the group of students. A sample of 35 students of the 42 visually impaired freshmen and returning students registered in the 2014/2015 academic session, which included both males and females, ages ranging between 16 and 40, were contacted for this study (Attendance Register, Soroptimist Centre, 2015).

In-depth interview, as a research instrument was adopted to examine the information needs, sources of information consulted and the barriers students with visual impairment encountered in their quest to use library resources. This method was adopted because the respondents were students with visual impairment who are likely to have problems reading a survey questionnaire. The researcher contacted Emmanuel Oladipupo, President of the Association of Students with Visual Impairment, University of Lagos Branch, who seek the permission of the students and granted approval to conduct the interview. The students were informed that their identities shall be kept discreet and responses shall strictly be used for research purpose only. All interviewees consented to participate in the study. The interview which lasted from 45 to 90 minutes was held at the Soroptomist Braille Centre, University of Lagos. Following the transcription, a qualitative thematic analysis was done.

Findings and Discussion

This section describes the findings of study on the information needs of the SWVI, strategies deployed and challenges faced when using library resources. Based on the interactive method of interviewing, the students were asked to discuss freely their experiences and challenges, as well as what they thought could be a way out of the identified problems. Several questions and discussions were raised, ranging from whether they have visited the main library and the Soroptimist Centre; their satisfaction with the services rendered; and whether their information needs were met by the librarians.The interview involved SWVI of different gender from different faculties and department.

The demographic characteristics in Table 1 shows that 40 percent of the respondents were in 400 level while 20 percent were in 300 and 100 level respectively. This indicates that majority of the respondents have knowledge to appreciate the subject of the survey. The highest proportion of the respondents (68.6 percent) were male, while 31.4 percent were female. The respondents who had attained the age of at least 20 years constitute 42.9 percent. Regarding the religious affiliation of the respondents, 77.1 percent were Christians and 2.0 percent identified with Islam. This shows the predominance of christianity among the SWVI in the study area.

Table 1: Demographic Characteristics of the VIS

Demographic Characteristics	Frequency	Percent
Age Bracket (Years)		
16-20	13	37.1
20-24	15	42.9
25-29	4	11.4
30-34	2	6.0
35-40	1	2.9
Total	**35**	**100**
Gender		
Male	24	68.6
Female	11	31.4
Total	**35**	**100**

Religion		
Islam	7	20.0
Christianity	27	77.1
Others	1	2.9
Total	**35**	**100**
Programme Category		
Undergraduates	33	94.2
Postgraduate	2	5.5
Total	35	100
Grade Level		
100 Level	7	20.0
200 level	5	14.3
300 Level	7	20.0
400 Level	14	40.0
500 Level	1	2.8
Postgraduate	1	2.8
Total	**35**	**100**

The study asked the SWVI their information needs. The respondents were to respond to prepared need areas. The findings as shown in Table 2 shows that the SWVI have information needs in eight specific information areas which includes:, information on how to perform task such as registration, course materials download and housing 82.6 percent, how to login in and access library web-based resources 94.3 percent, how to conduct search strategies to use electronic information, especially library subscribed databases 74.3 percent, how to learn and use adaptive aids and assistive technologies 97.1 percent, how to use social media platform (), financial information (71.4) and directional information on whom to contact for advice on how to use the web-based resources 77.1 percent.

This finding shows that a large majority of SWVI needed information majorly to meet their academic, financial and directional needs. Information on how to use the internet (65.7 percent), employment/job related information (62.6 percent), orientation and mobility information (57.1 percent) were also considered needed. However, information on politics & government, health and recreational were considered not needed.

Table 2: Types of Information the VIS Need

S/N	Item	Needed	Percent	Not Needed	Percent
1	Orientation and mobility information	20	57.1	15	42.8
2	Internet knowledge information	23	65.7	12	34.3
3	Information on online course materials	29	82.6	6	17.1
4	Login access to use library web-based information	33	94.3	2	5.7
5	Search strategies for the use of web-based information	26	74.3	9	25.7
6	Adaptive technology/Assistive aids information	34	97.1	1	2.9
7	Online registration/Housing information	31	88.6	4	11.4
8	Financial aids(Bursary / Grants / Scholarship) information	25	71.4	10	28.6
9	Employment/Job related information	22	62.6	23	65.7
10	Health Information	8	22.9	27	77.1
11	Politics & Government	11	31.4	24	68.6
12	Directional information	27	77.1	8	22.1
13	Recreational Information	16	45.7	19	54.3

The responses as shown in table 3 shows that only 22.9 percent of the participants responded positively to use of the university library while 77.1 percent responded negatively. Those who responded positively explained that they only use the library to meet with librarians for research purposes, make inquiry about availability of particular library materials, make request to convert recommended reading materials to machine readable formats (scanning), as well as using internet services. (See table 3).

Table 3: Use of the Library

Responses	Frequency	Percent
Yes	8	22.9
No	27	77.1
Total	35	100

As shown in table 4, even the minority (8participants) of the SWVI that have used the main library on occasions when they have needs, reported that their needs where not entirely met.

Table 4: Unmet Information Needs of the SWVI

Responses	Frequency	Percent
Yes	3	
No	5	
Total	8	100

The university library is expected to meet the information, especially the academic needs of all its students. However, this study revealed that not all of the expectations of the SWVI are met by the university library. From students who reported to have their needs met at the library, one of the students, explained that "*the library porters and librarians has been quite helpful when in need of directional and relevant information when we ask for specific materials*".

Whilst one of the students explained that his helper who serves as his guide had informed him during their visit to the library, that the library is well stocked with relevant and current print resources and internet could be accessed at the e-library and other parts of the library because the library operates both cabled and wireless environment, According to the student "*the resources and services are not in accessible format to students with visual impairment. You can see that the computers in the e-library does not have the software requirements for my use and the library does not provide assistive technology tools to enhance the use of library resources.* The student explained that *he only use the library to connect to the library internet facility in order to use his android mobile phone and personal laptop*".

However, one of the students fussed and exclaimed in annoyance "*The library does not meet all my academic expectations, not at all. The relevant materials needed for my assignments are not available in an accessible format. Of what relevance is the library to my academic excellence?*"

Majority of the SWVI mainly using the Soroptomist Braille Centre because of the availability of a braille embosser, few desktop computers, scanners, internet access and a stationed library personnel who helped with their information needs. Majority of the student who would use the centre rather than the library were asked why they do not visit the library. One of the respondents commented that "*There is no point of me going to the main library because the infrastructure does not allow me to use the information resources housed therein*".

This findings is at variance with Tilley, Bruce and Hallam (2007) who reiterated in their findings that whether serving academic, public or special population, libraries are charged with making information resources available to their constituents, al all times, everywhere. Given the fact that most information resources available in the library was acquired, processed and designed to meet the needs of sighted library users, this findings has shown that the SWVI are excluded from library infrastructural and information network. Conversely, in the study of Goodall and Pattern (2011), the authors also confirmed that students with visual impairment are deprived of services they require from the library and emphasized that to improve academic

performance of SWVI, academic libraries should ensure that relevant resources and services are available in accessible formats. In Nigerian university libraries, these population were considered neglected because for over two decades, many of the libraries have used their websites to provide information products and services such as online catalogs, e-books, e-journals, indexes to literature, full-text journal articles, electronic reserve services, institutional repositories, and links to other electronic resources to facilitate access to the Internet and other digital resources which makes SWVI a marginalized user population (Gbaje & Kotso, 2014).

During the interview, interpersonal sources such as: personal helpers, coursemates, lecturers, friends and family and the internet were noted by all the interviewees as major sources of information. This show that the preferred source of information is not the documents in Braille formats but in electronic documents.

One of the interviewees specifically said that: *I used the internet to access and use information from my institutional website and other websites.*

Another student said that: *With the internet, I have immediate access to websites and use various electronic information which are only a click away*

Technology is no doubt a playing field and a great equalizer for students with visual impairment. It was observed during the interview session that the SWVI who were using the computer to access the internet did not lack precision using the input devices such as the mouse and keyboard. This shows that these category of students have acquired the technology skills that gives them options for gathering and conveying information via the internet. This results is in line with the studies of (Williamson et all 2002; Tilley et al 2007; Schiff, 2009); and Simsek et al, 2010) who agreed that information students with visual impairment accessed via this medium will help them to understand information systems which could be accessible in various formats to support their learning and research needs.

Though technology has helped to make access to information much possible for everyone but not without its challenges. Students with visual impairment meet barriers of all types when looking for information to complete tasks activities such as reading, research, communicating with others, and searching for information on the internet independently. When describing the challenges in using library resources and services, with emphasize on the internet all the interviewees claimed to have challenges in their efforts to use the much needed information in the university library as a result of lack of: talking books and large print books for blind students, computer systems with required software for SWVI, assistive technology tools, inability to get reading materials scanned, lack of training on computer knowledge for SWVI who does not know how to use the computer, frequent software updates with its cost implication, Lack of upgrade of the computers in the Soroptomist Center to the latest version, lack of literacy programs in the use of the library Online Public Access Catalogue (OPAC), subscribed databases and other library electronic resources, and inadequate number of librarians to serve SWVI population.

The identified challenges shows why the SWVI preferred to use the Soroptomist Centre where they have access to the Braille embosser, limited number to computers with JAWs software, scanners and dedicated personnel to attend to attend to their need. The result of this findings confirmed the position of Schiff (2009) where he reported that advances in information technology present unusual challenges for the average students and the challenges are magnified because the intermediate assistive technology in itself is not easy to master. However, with the impact of technology on students with visual impairment, it is obvious that life today is better than it was in the past, it might get better as technology evolves. This is evident in the recent developments as shown in the vendor fair and exhibition organized by the Ann Arbor District Library in May, 2016 where latest products and services for persons with visual impairment was demonstrated (AADL, 2016).

Conclusion

It is clear from this study that the actual information needs by students with visual impairment varies. Nevertheless this study has shown that academic, financial, recreational and directional are the core information needed by the majority. Overlaying this is the need for information to be made available in accessible formats. The University library has put the right foot forward in providing information services for students with visual impairment in the University of Lagos. However, the services

provided have not sufficiently met the needs of the SWVI but has continue to expand and improve. From the early beginnings of the Soroptomist Center, as charitable acts, library services are now considered as a right for every SWVI who demonstrates need. Unfortunately, with slow acquisition of required assistive technology tools, lack of human and material resources and lack of required training skills for librarians, only a small percentage of this population can receive effective and efficient library services. Provision of services results from the concerted efforts of the university library. A review of the extent of services currently provided indicates that a lot more still needs to be done.

Future Directions

In charting a course from project discussion to effective service delivery to effectively meet the information needs of SWVI in the University of Lagos, the library management has mapped out modalities for integrating the information requirements of these category of students into mainstream library services to ensure that students with visual impaiments have access to use same library resources and services as the fully-sighted students. Given the library services being currently provided at the Soroptomist Centre, University of Lagos, it has become clear that the growing demand for library information resources which has improved would not pause while the university management implement the library project plan. To efficiently implement the project, the library management has designed the project implementation into the following five phases:

Phase 1: Feasibility assessment- Library space and some requirements

Phase 2: Procurement and installation

Phase 3: Training of library workers and beneficiaries

Phase 4: Sustainability

Phase 5: Branding and launching

There is a strong intention from the university management to support the well library coordinated project as the library is well placed to respond to the present and future changes in meeting the information needs of students with visual impairment. Phase one of the project has been implemented. The Library management has created library space within the library building and has acquired some furniture and hardware requirements. However, there remain many institutional operating procedures that would be updated for the actualization of phases two to five. Areas where further harmonization between the university management, Library management and the Faculty would be required and useful include funding, performance management and library-faculty collaboration.

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