Visually Impaired Students in Quest of Information in Two Public University Libraries in Ghana

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Abstract

Public university libraries in Ghana can boast of numerous resources to support their users'. However, visually impaired students are unable to easily access, use and profit from these numerous resources available to all other users. The study targeted eighty visually impaired students in two public universities in Ghana. Therefore, this study sought to identify assistive technology devices used by students, challenges visually impaired students faced in quest of information and strategies to enhance access to information. The study adopted quantitative survey design and questionnaire was used for the study. The results were presented in percentages, frequencies and tables. The major challenges identified were format barrier, mobility, lack of assistive technology devices and negative attitude. The study also revealed that only one library had a special section for the visually impaired students and the facilities were inadequate. The study recommended teamwork between the University Library and Office of Students with Special Needs (OSSN)/Resource Centre and provision of ICT-based facilities and software. The University Librarian should take into consideration visually impaired students when providing information materials to library patrons. This study can also be used as a guide by librarians in providing information infrastructure for students with visual impairment.

Keywords: Public University Libraries, Information Seeking Behaviour, Visually Impaired Students, Assistive Technology Devices

Introduction

Information is very significant and essential element in this digital age. Information plays very important role in decision- making process in the government, organizations, institutions and people's daily activities (Majinge & Stilwell 2014). Therefore, information is becoming a tool of power of 21st century. The main purpose of the library being a resource centre of information and knowledge is to offer relevant information at appropriate time and in the different formats to its users irrespective of culture, gender and physical conditions (Majinge & Stilwell 2014). Its other main purpose covers the provision of information to special needs students. American Library Association (2013), established that libraries should not be bias in providing information against people living with disability and should make sure that disabled students must have equal access to library materials. Also, in

the UN 2030 Agenda, the International Federation of Library Associations and Institutions (IFLA) (2015) established that expanding access to information and knowledge across the society and reinforced by information and communications technologies (ICTs), helps sustainable development and also enhances the life of the people. Access to information permits any user to retrieve information needed without any difficulty. For that matter, people with disability also have the same right to access the requisite information they need (Awais & Ameen, 2015). In fact, people with disability encounter discrimination among society as well as library facilities. In Ghana, persons with disability constituted about 3% of the populace of the country. Nationally, about 40% of people with disability had visual impairment which was the most common type of disability followed by physical disability (Ghana Statistical Service, 2013).

In the enactment of "Education for All", more visually impaired students attend tertiary institutions and offer different programmes with the 'normal' students and it is mandatory for the library management to also make library resources available and accessible to visually impaired students (Ekwelem 2013).

Most of the public universities do not have the requisite facilities in their libraries to admit visually impaired students. In Ghana, out of the fifteen public universities only three universities admit students with visual impairment, which is contrary to Section 20 of the Persons with Disability Act, 2006 Act (715) which requires that all institutions should admit persons with disabilities who qualify for their programs. Information is essential in our daily activities and each person in the society must be informed. As such, the visually impaired students will effectively use the information to enhance their academic pursuit. The visually impaired students can improve their reading if assistive technology devices have been provided by the library to them. Loss of vision completely prevents visually impaired students from reading information in printed form (Wusasa, 2013). Therefore, The Individuals with Disabilities Act (IDEA) (2004) dictated that suitable support services need to be given to students with special needs in tertiary education settings to ensure an inclusive community.

These people also get admission to different programs at higher education institutions in Pakistan. When they study with normal students, they are not provided enough facilities for access to information as much as to a normal student or person in our country. Otibu (2014) cited in Appiah (2017) indicated that visual problems can originate from different causes, such as congenital circumstances, injury, eye disease, brain trauma and diabetes. Awais and Ameen (2015) in their study stated that libraries have the right responsibility to make their resources accessible to all users irrespective of their backgrounds. However, a lot of users especially visually impaired students because of their disabilities have restricted access to information materials. Searching for information in any format is time consuming and frustrating especially for special needs students (Appiah 2017). Sometimes, majority of information searchers decline in searching information because of the numerous difficulties they meet. However, the growth of information communication technology (ICT) has given the countless opportunities for special needs' students to change their standard of living in a more effective way (Butucea, 2013). However, study conducted in Ghana confirms lack of research on visually impaired students quest of information and challenges they encountered. Awais and Ameen (2015) confirmed that visually impaired students crave for a well furnish library with appropriate ICT facilities to enhance their academic work. Therefore, the preceding study showed the need for further study to improve the existing state of access to information for persons with visual problems. Then, the aim of this study was to examine the existing facilities of information access for students with visual impairment who have been registered in academic universities in Ghana specifically University of Ghana, Legon (UG) and University of Education, Winneba (UEW). This research attained its aims by solving the subsequent study objectives.

Objectives of the Study
The objectives of the study were as follows:
1. To identify special section available in both libraries for students with visual impairment
2. To examine the assistive technology devices used by students with visual impairment in two public university libraries in Ghana.
3. To identify the main challenges confronted by students with visual impairment in search of information.
4. To identify the strategies to enhance access to information by students with visual impairment in the two libraries under study.

Methodology
A survey research design was used for the study. A questionnaire was used to solicit data for the study. The total population of the study comprised of eighty (80) students with visual impairment who have been registered as special needs students with University of Education, Winneba and University of Ghana, Legon. In all, twenty (20) visually impaired students registered as a special needs students with University of Ghana (UG), Legon whilst sixty (60) students registered as special needs students with University of Education, Winneba. No sampling techniques was used because of the manageable size so the total population was used as a sample size. A questionnaire was used as an instrument for data collection. The questionnaire was grouped into five parts. Part 1 sought the demographic information of respondents with the following attributes: gender, level of study and programme offered. Part 2 sought special section available in the library for visually impaired students, Part 3 sought the assistive technology devices available,

and students' source of information while Part 4 inquired into the challenges confronted by visually impaired students in accessing information. Part 5 inquired into the strategies to be adopted to enhance access to information by visually impaired students. The study was conducted from January to March 2019. Eighty copies of brailed questionnaire were given to the students by the researcher. Copies of the responded questionnaire were given to the Resource Centre to convert their answers into printed form. Data collected were analyzed using Statistical Package for Social Sciences (SPSS). The analysis was presented in percentages, frequencies and tables.

Review of Literature

Several studies from developed and developing countries have been done on blind students in quest of information in academic libraries (Ahmed & Naveed 2020, Appiah 2017 and Tripathi & Shukla 2014). The use of information and communication technology in libraries has enhanced and encouraged fast access to library information services for special needs students including visually impaired students.

Amin et al. (2021) conducted research on challenges of visually impaired students in academic institutions in Malaysia. Interview was used as an instrument for data collection. Their findings established that monetary issues, social humiliation, accessibility, peer acceptance and difficulty in studying in university was their main challenge. Ahmed & Naveed (2020) conducted research to identify how visually impaired students access information in academic institutions at Lahore, Pakistan. The findings indicate that visually impaired students generally approached people such as friends, colleagues, family members and lectures for accessing academic information. Their main challenges in seeking information are format, directional, technical, ICTs illiteracy, and financial issues. A study done by Appiah (2017) on information seeking behaviour by blind students in two University in Ghana stated that visually impaired students find it difficult to access relevant information for academic work. Also, students from the two universities strongly established that they only rely on colleagues, the internet and radio for information. Sehic (2013) cited in Appiah (2017) stated that blind and visually impaired students when seeking information depend solely on interpersonal sources, radio and the Internet. The findings also indicated that libraries serving visually impaired students were not fully equipped with appropriate format and facilities. Nur Azuki and Yohan (2013) cited in Amin et al. (2021) also confirmed that it is good to accept peers but only few will be able to take special needs students as their intimate friends. Not everybody can be good friend to special needs students, some of the 'normal' students cannot compromise with them, others also can have empathy and assist them when the needs arise.

Data Presentation Results

Table 1: Questionnaire Distribution and Return Rate

SN	Name of Library	Number of Questionnaire Distributed	Number of Questionnaire Returned	Percentage (%)
1.	University of Ghana (UG), Legon	20	20	25
2.	University of Education, Winneba	60	48	60
	Total	80	68	85

Source: Field Survey, 2019

Table 1 above depicts the percentage of questionnaire distributed and the return rate. The analysis shows that all the 20 copies of the questionnaire were answered and returned in University of Ghana (UG), Legon while 48 copies were returned out of the 60 copies that were administered in University of Education, Winneba. In general, the questionnaire return rate is 85%. Concerning the gender of the students, University of Ghana had more males 16 (23.5%) students than female students four (5.9%). Also, University of Education, Winneba had more males 38(55.9%) than female students 10 (14.7%). With reference to their level of study, only University of Ghana had one (1.5%) student offering graduate programme. The result indicates that most (98.5%) of the students were undergraduates. The Table 2 below depicts the level of their study.

Table 2: Level of Study of Respondents from both Universities

Level of Study	University of Ghana		University of Education		Total	
	F	%	F	%	F	%
600	1	1.5	0	0	1	1.5
400	4	5.9	1	1.5	5	7.4
300	5	7.4	2	2.9	7	10.3
200	8	11.7	17	25	25	36.7
100	2	2.9	28	41.1	30	70
Total	20	29.4	48	71	68	100

Source: Field Survey, 2019

Table 3: Programme Offered by Respondents from both Universities

Programme Offered	University of Ghana	University of Education	Percentage
Social Work and Religion	10	N/A	14.7
Political Science/ Sociology	9	N/A	13.2
Communication Studies	1	N/A	1.5
Special Education and English Language,	N/A	10	14.7
Special Education and Social Studies	N/A	35	51.5
Special Education and Guidance and Counseling.	N/A	3	4 .4
Total	20	48	68 (100)

Source: Field Survey 2019

Table 3 above displays the programmes offered by respondents from both universities, in University of Ghana, 10 (14.7%) of the students were reading Social Work and Religion, nine (13.2) were offering Political Science/ Sociology and only one (1.5%) was reading Communication Studies. Likewise, from University of Education, Winneba the study shown that, 10 (14.7%) students were studying Special Education and English Language, 35 (51.5%) of the students were reading Special Education and Social Studies while three (4.4%) were studying Special Education and Guidance and Counseling.

Objective 1: To identify Special Section available in the Libraries for Visually Impaired Students

Students were asked to indicate if there were special sections designated in the library for visually impaired students in both libraries. All the 48 (100%) students from the University of Education, Winneba indicated that, there were no special sections in the library for them. In the case of University of Ghana, Legon, the students confirmed that there was a special section designated in the Balme Library for visually impaired students which is ICT Laboratory and Braille Library.

Objective 2: To examine the Assistive Technology Devices available for the Visually Impaired Students

Table 4: Assistive Technology Devices Available in both Libraries

Assistive Technology Devices	Balme Library, Legon	UEW, Library
Braille embosser	No	No
Braille printer	No	No
Braille scanner	No	No
Digital recorders	Yes	No
Computers with speech software	No	No
Computers	Yes	No
Close Circuit Television (CCTV)	No	No
Screen magnification	No	No

Source: Field Survey, 2019

From Table 4, it can be deduced that only Balme Library has recorders and computers without speech

software at the Braille section and computer laboratory for visually impaired students. In case of UEW Library, there were no assistive technology devices for visually impaired students. The students further indicated that assistive technology devices they used can be found at the resource centre at the South Campus. In a subsequent question, students were asked about the reason for the library not to provide these devices, all the students indicated lack of funds on the part of the library. Unlike University of Ghana, Legon, the respondents confirmed that ICT Laboratory has only computers without JAWS Software and few recorders but most of the devices such as Braille embosser, Braille printer, scanner and recorders are found in the Office of Students with Special Needs (OSSN) behind the College of Agriculture and Consumer Sciences on the Campus. Also, the students were questioned to state their main sources of information on campus, 38 (55.8%) of the students rely on colleagues, 26 (38.2%) used internet whilst 25 (36.7%) stated radio to get information.

Table 5 above depicts the main challenges confronting visually impaired students in accessing

Objective 3: To identify the main challenges confronted by visually impaired students in search of information.

Table 5: Main Challenges Confronting Visually Impaired Students in Accessing Information

Challenges	University of Ghana		University of Education		Total	
	F	%	F	%	F	%
Format Barriers	19	27.9	46	67.6	65	95.5
Mobility	18	26.4	36	52.9	54	79.4
Negative Attitude	14	20.5	25	36.7	39	57.3
Lack of Assistive Technology	8	11.7	28	41.1	36	52.9

Source: Field Survey, 2020

information in the university libraries. The result collected from the selected university libraries established that 65 (95.5%) of the students indicated format barriers as one of their main challenge, 54 (79.4%) of the students ranked mobility to be their second challenge in quest of information, 39 (57.3) students stated negative attitude while 36 (52.9%) of the students indicated lack of assistive technology.

Objective 4: To identify the strategies to enhance access to information in the two university libraries in Ghana under study.

Students were asked to indicate strategies to be used to enhance their access to information. Students from both university libraries suggested the following strategies: provision of adequate funding for public university libraries which enrolled special needs students, provision of library collection development policy, good professional networking, supply of assistive technology devices in the library for visually impaired students and provision of special section for special needs students in the library stock with appropriate facilities.

Discussion

Information is essential in our daily activities and each person in the society must be informed. Actually, searching for information of any format is time consuming and frustrating especially for special needs students Appiah (2017). The study shows that there were more males consisting of (79.4%) of the students in both universities than female (20.6). The result also indicates that most (98.5%) of the students were undergraduates and there was only one (1.5%) graduate student. Concerning the programmes they offer, students from both universities offer social sciences programmes.

With respect to special services designated for visually impaired students in the library, only University of Ghana Balme Library has special section. Although University of Ghana, Legon Balme Library has provided a special section for visually challenged students yet to the students the facilities were insufficient and the room was not spacious. Similarly, the only visually impaired graduate student who need to do intensive research and consult different sources was also challenged in accessing the library online databases since the computers in the special room have not been installed with JAWS software. With this, the graduate student has to rely on textbooks and other study materials.

This suggestion by the students corroborates with the findings by Appiah (2017) that, visually impaired students are not enjoy library resources and its services. The Canadian National Institute for the Blind (CNIB) Library (2013) also indicated that library's collection and services should be accessible for all by providing materials in alternative formats. This declaration by CNIB was not observed by both university libraries under study.enabling people with disabilities to perform tasks which they were formerly unable to accomplish. Assistive technologies offer independence by enabling people with disabilities to perform tasks which they were formerly unable to accomplish. Assistive technologies offer independence by enabling people with disabilities to perform tasks which they were formerly unable to accomplish.

Concerning assistive technology devices they used in the library, UEW Library are not furnished with any devices in use for the students. In a probing question the students attributed it to be lack of funds on the part of the UEW Library. However, the students confirmed that the materials and equipment (assistive devices) suitable for them are housed in the resource centre at the South Campus. This was confirmed through observation by the researcher and through short discussion with the University Librarian. This finding corroborates with Ayiah (2017) that UEW Library are not equipped with any assistive technology devices for students with visual impairment to access information in the library.

Unlike Balme Library, the Braille Library and ICT Laboratory has few computers without speech software and few recorders. Although, Balme Library has designated special sections for the students, the students also reported of lack of assistive devices such as computers with JAWS Software, Braille embosser, CCTV, Internet and optical character recognition (OCR) to access information. This is in line with the study by Ayiah (2017) which stated that visually impaired students find it difficult to access relevant information for academic work. Also, students from the two libraries strongly established that they only rely on colleagues, the internet and radio for information. This also supports Ahmed & Naveed (2020) findings which indicate that visually impaired students generally approached people such as friends, colleagues, family members and lectures for accessing academic information.

Daily activities have major problems for visually impaired students, including the way of finding information, unfamiliar surroundings and detecting objects and persons. Students were asked to indicate the challenges they encounter in quest of information. Students from both universities identify format barriers as the main challenge in search of information as reading needs eyesight. And all the library materials are in print formats which were not usable for them. Tripathi and Shukla (2014) indicated that only 3% of the printed materials are in alternative formats for visually impaired students. Low vision students do not have equal access to printed materials to meet their information needs. They further stated that libraries should make provision for assistive technology devices to enhance students' information needs.

Mobility was one of the challenges and it also slows down their quest of information since they need assistance before, they can move to get information. Mobility is a major challenge to this group of students' and university management should come to their aid to make it less bearable by covering open gutters and providing visually impaired friendly directional signs to the vantage point. The sad thing was that in the absence of their friends or colleagues they cannot move alone to the library to seek information. This study agrees with Kabogolo (2020) findings which indicated that mobility greatly impedes visually impaired students in quest of information.

Generally, the university community accepts special needs students on the campus. However, some of the lecturers and the students were not friendly to them and this made them feel uncomfortable. Some lecturers during their lecturing period will point to pictorial image on the screen which will confuse the visually impaired students to follow the lesson well. If the lecturers with special needs students were informed and educated, it will play an essential role to ensure inclusive learning. Also, students on campus have a variety of discernments concerning visually impaired, some have negative perception on them which will mar the integration life on campus. This finding corroborates with Amin et.al (2021) which indicated that public stigma and peer to peer acceptance are other challenges facing visually impaired students in academic institutions. Also, Nur Azuki and Yohan (2013) cited in Amin et al. (2021), in their study indicated that acceptance of peers is good, however, only few accept visually impaired students as friends.

Academic libraries were equipped with learning aids and adaptive technologies for visually and hearing-impairedpersons. This was probably the biggest challenge since persons with such impairments could not intellectually access the resources of their

respective libraries

Assistive technology (ATs) devices offer independent by enable people living with disabilities to complete works they were previously incapable to do, examples of ATs for visually impaired consist of screen reader, close- circuit television for partially blind students, computer with JAWS Software, optical character reader, Braille embosser, Braille printer, Braille scanner and digital recorders Ahmed & Naveed (2020). They also indicated that through the development of assistive technology devices, the visually impaired students can now participate fully in the world to bridge the gaps of accessibility, reading ability and has served as a great equalizer among the special needs students and non- disabled students. As a result of their condition, the visually impaired students require suitable gadgets for their information needs and this can be done through the use of assistive technology devices.

Conclusion

Students with visual impairment have diverse needs because they are special people. However, they should not be isolated from other students. They need information to make an informed decision just as other "normal" students. Findings from the study indicated that only Balme Library has a special section for students with visual impairment. But the facilities there were inadequate and the place was not spacious. Students from UEW do not access the University Library, although, the resources were available but the formats were not applicable to them. This is contrary to CNIB's (2013) guidelines that people with visual impairment must have the same rights to participate in the information society like any other group of students. The two university libraries studied do not have relevant materials in appropriate formats and assistive technology devices in the library that can help them to achieve their educational information needs. The students attributed lack of assistive technology in the library as a result of lack of funds. The study also established that students always depend on colleagues, the internet and radio to get information. Visually impaired students have numerous challenges confronting them on campus but the students mentioned the main challenges impeding information access as format barriers, mobility, negative attitude and lack of assistive technology.

Recommendations

It should be mandatory for academic libraries which enrolled special needs students especially visually impaired to offer an inclusive environment with assistive technologies to satisfy their information needs.

The following recommendations were made to improve information access:

Sensitization

To solve the problem of negative attitude towards people with visual impairment is to improve the university community understanding on the special needs students. University admitting special needs students should put in place measures that can help them to overcome some of the challenges confronting them. Awareness creation and education on the needs and rights of special needs students also need to be done in the university community to ensure healthy environment for the students.

Funding

Adequate funding helps the library to offer information sources and services needed to meet the information needs of users. It is clear that due to economic situation, academic libraires are unable to procure special gadget for special needs students. However, libraries can acquire the assistive technology that are often demanded by the students. The library should be given enough funds to purchase assistive technology devices since these devices are expensive. In this regard, the library can also solicit funds through proposal writing and from non-governmental organizations to enable visually impaired students have a positive learning environment. A well furnish special section should be provided for special needs students to help them easily access the library resources with ease when the library has enough funds.

Corroboration

By offering enabled library environment to the special needs students involve the corroboration of stakeholders. This may include government of the nation, university management, chairperson of the library board, librarians, non-governmental organizations and agencies who have key interest in disability. Therefore, the two libraries should team with the stakeholders to provide comprehensive library to the special needs students especially for the visually impaired students. Also, the two university libraries should work in collaboration with the Office of the Students with Special Needs and Resource Centre to assist visually impaired students to enhance their information seeking and also to foster education

excellence for individuals with visual impairment. In a nutshell, the university management, chairperson of library board and the librarian must play a key role to assist special needs students in academic institutions to improve their academic performance.

Library Policy on Special Needs Students

For academic libraries to serve special needs students efficiently and effectively there should be the need for a well written library policy to serve as a blueprint for acquisition, allocation of budget and training of library staff. The policy has to be implemented by the library to provide the necessary equipment and facilities to meet the needs of special needs students. Library policy on special needs students will assist the library in the selection of library resources in alternate formats. It will also enable the library to procure ICT facilities to support their information and educational needs.

Provision of Assistive Technology Devices and Software

The university and the library management should shoulder their responsibilities by providing assistive technology devices to visually impaired students in the library to access information. Also, the computers should be aligned with JAWS Software as ICT has transformed the reading pattern of students who are visually impaired. Visually impaired students as well as the library personnel who work with the students need to be trained to manipulate the assistive technology devices to develop their skills and competency levels. Library facilities must be improved by providing materials in alternative formats (such as CD's, softcopies).

Mobility

Since mobility emerged as one of the challenges for visually impaired students at least each library should ensure that their buildings should be accessible. Gutters should be covered so that the students will not be injured and visually impaired friendly directional signs should be placed at vantage points to ease movement. The Librarian, in corroboration, with the resource centre should organize orientation and mobility strategies to visually impaired students to familiarize the library and its environs to ease free movement.

References

Ahmed, M. R.,& Naveed, M. A. (2020). Information accessibility for visually impaired students. Pakistan Journal of Information Management & Libraries (PJIM&L) https://doi.org/10.47657/179. Retrieved: 09/11/20.

Amin, A. S., Sarnon, N., Akhir, N. M., Zakaria, S. M., and Badri, R. N. F. R. Z. (2021). Main challenges of students with visual impairment at higher education institutions. International Journal of Academic Research in Business and Social Sciences, 10(1), 734-747. Retrieved: 01/ 08/22.

Appiah, D. K. (2017). Information seeking behaviour of visually challenge students in public universities: a study of University of Ghana, Legon and University of Education, Winneba. Library Philosophy and Practice (e-journal). 1507. http://digitalcommons.unl.edu/libphilprac/1507. Retrieved: 04/12 /20

Ayiah, E. M. (2017). Provision of assistive technologies in academic libraries to students with visually impaired in Ghana; a case study of the University of Education, Winneba, Ghana. Library Philosophy and Practice 1679 (e-journal). Available at: http://digitalcommons.unl.edu/libphiprac/1679.

Awais, S., & Ameen, K. (2015). Information accessibility for students with disabilities: an exploratory study of Pakistan. Malaysian Journal of Library & Information Science, 20 (2), 103-115. Retrieved: 04/12/20

Butucea, D. (2013). Personalized e-learning software systems, extending the solution to assist visually impaired users. Journal of Visual Impairment and Blindness, (3), 41–49.

Canadian National Institute for the Blind. (2013). CNIB Library. Retrieved from http://www.cnib.ca/en/services/library/Pages/default.asp

Ekwelem, V. O. (2013). Library services to disabled students in the digital era: challenges for outcome assessment.

Ghana Statistical Service (2013). 2010 population and housing census. national analytical report. Accra: Ghana Statistical Service

Government of Ghana (2006). Persons with disability Act (2006), Act 715. Accra: Assembly Press.

International Federation of Library Associations and Institutions (IFLA) (2015). Access and opportunity for all: how libraries contribute to the United Nations 2030 Agenda. The Hague: International Federation of Library Associations and Institutions.

Kabogolo, D. A. (2020). Information seeking behaviour of visually impaired students: the case of University of Dar es Salaam. Master's Thesis, Retrieved: 19/08/ 2021.

Majinge & Stilwell (2014). Library service provision for people with visual impairments and in wheelchairs in academic libraries in Tanzania. SA Journal Libraries and Sciences, 79(2), 39-50. Retrieved: 10/02/21

Wusasa, B. F. (2013). Information service delivery to the visually impaired: a case study of Hope for the Blind. Disability and Society, 5(1), 18–23.

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