Towards Sustainable Development Goals: What Role for Academic Libraries in Nigeria in Assuring Inclusive Access to Information for Learners with Special Needs?

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Abstract:

This study surveyed the facilities and services available for inclusive and equitable quality education for physically challenged and visually impaired students in Nigeria. The study was guided by five research objectives. The population of the study consists of physically challenged and visually impaired students from six Federal Government funded universities in six geopolitical zones of Nigeria. Interviews and focus group discussion were used for data collection. The data collected were analysed qualitatively. The result showed that among the six universities studied only one has a special section for this category of users, although others are making efforts towards having such a facility. Though the students indicated that they receive various kinds of library services, it was found that these services were not very effectively presented. The challenges identified include lack of assistive technology to aid their access to information, unavailability of lifts in to facilitate their movement, especially to floors where ICT facilities and other resources are located. The study highlighted that for inclusive and equitable quality education for people with disability, access to information is important; and since the library plays a key role in providing this access, there is need to develop policies and put structures in place to cater for students with special needs. Based on the findings, the investigators came up with a model for Inclusive access to information for students with special needs.

Introduction

Inclusive education is essential for sustainable development. Every educated citizen is an asset to every community and the society at large, and helps ensure sustainable peace and development. Effective higher institutions are at the heart of an inclusive and quality educational system. For effectiveness, the library of an academic institution must actively ensure access to information in support of the main objective of institution, which is to ensure quality teaching, learning and research. Hence, the role of the library in ensuring inclusive access to information is crucial in higher education as a knowledge system essential for achieving the transformative UN 2030 Agenda and Sustainable Development Goals.

As a plan of action for people, planet and prosperity, the UN 2030 Agenda for sustainable development seeks to strengthen universal peace and freedom. For effective development in any nation there must be peace and freedom, therefore the university library as a knowledge system has a lot to do in the area of information dissemination to ensure peace and freedom for all citizens of the world and to support sustainable development. Sustainable development goals are transformative changes needed to cater for the immediate needs of the present generation without causing harm to the future generation in terms of meeting their own needs. The items which formed the sustainable development goals were carefully selected and included after a wide consultation by the UN. There are seventeen of them. However, this study will be anchored on the fourth goal which is to "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (United Nations, 2015).

Inclusive and equitable quality education is important for sustainable development. UNESCO (2009) stated that inclusive education is concerned with all learners with focus on those who have traditionally been excluded from educational opportunities – such as learners with special needs and disability and children from ethnic minorities. Stubbs (2008) stated that "inclusive education is a wide range of strategies, activities and processes that are geared towards making the reality of a universal right to quality, relevant, and appropriate, education." In addition, the paper described learning as a continuous process which takes place in both formal and informal forms. The goal of inclusive education is to create a world of peace, tolerance, sustainable use of resources, and a world where basic needs are met.

This study will adopt the categories as identified in UNESCO's definition – "learners who have traditionally been excluded from education opportunities such as learners with special needs and disability" – in discussing provision of resources to people with special needs (UNESCO, 2009). Roy and Bandyopadhyay (2009) noted that physically challenged users are the handicapped people who in one form or the other are incapacitated to make effective use of the library. People with special needs and disability can be described based on the impediments they have. Some of them may be physically challenged, visually impaired, mentally impaired, etc. but they live alongside those who are physically and/or mentally whole, and are "... arguably the largest group ... who have been and continued to be persistently excluded from education".

According to Omonijo and Nnedum, (2012), form a significant part of the Nigeria's population. Many of them are intelligent and willing to get formal education, but their conditions have made it difficult for them to compete favourably in academics with their

peers. In most institutions, the facilities to aid them in accessing quality education may not be available. This frustrates their efforts to become literate and contribute their quota to the development of the nation. Based on these challenges, there is a pressing need for the universities and their libraries to formulate strategies to ensure information access and quality education for this category of learners. Inclusive education comes from the fact that education is fundamental to development. Therefore, this study is an effort to ascertain ways of ensuring information access for inclusive and quality education in Nigerian universities for the physically challenged and visually impaired people.

The specific objectives of the study are to:

1. Examine the facilities available for inclusive information access in libraries in Nigerian universities;

2. Ascertain the services rendered for inclusive information access in Nigerian universities;

3. Investigate the effectiveness of the services rendered for inclusive information access in Nigerian universities;

4. Examine the critical problems faced by students with disability in accessing information, and problems faced by institutions in providing the required services;

5. Identify the strategies/model to enhance information access for equitable education for students with special needs.

Literature Review

Information is closely attached to everything around us – be it economy, education, trade, etc. It is this reality that has led researchers and trends-watchers to believe that we are living in an information society – a society in which information forms the bedrock of every action we take. Balina (2014) makes it clear that "there are several indicators that characterize the development of information society, such as percentage of individuals using the internet, number of households with internet access and number of households with broadband access." Although the society is constantly harnessing the power that comes with information, everybody does not get equal access to information. At the heart of this are people with disability who may find it hard to exploit physical materials such as resources in libraries or even operate gadgets that can give them electronic information via the internet. Hence, the issue of inclusive access to information comes in.

Inclusive information access has been a subject of interest ever since it became clear that persons with disability have the same (if not greater) information needs as others, especially when it comes to tertiary institutions. This is made evident by Okoli (2010) who stated that people with disability face insurmountable barriers in their quest for education. Hence, over the years, librarians, education policy makers, global agencies and others who feel that there is a gap between persons with disability and the information they need, have continued to make contributions on the topic.

Facilities for Access to Information for Inclusive Education

Literatures reviewed agree that various facilities are required in order to achieve inclusive access to information resources and services in libraries. However, most of them see greater potentials in information and communication technology (ICT). According to Simpson (2009), ICT can serve as a barrier for persons with disability; it also has the potential to enhance their access to information. Many studies such as Rashid (2017), Abascal et al. (2016), and Gelastopoulou and Kourbetis (2017) focused on using ICT to enhance inclusive

access through adaptive/assistive technology. Whether in public libraries, academic libraries or school libraries, adaptive/assistive technology serves as a bridge connecting persons with disability and the information they need.

In a YouTube video posted by Ng Yan Liang (2016), it was evident that libraries in China are using adaptive/assistive technology as facilities for inclusive information access. In the video, the China Braille Press and Library are shown to have a Braille collection, a walking stick slot on the carrel, USB and ethernet slots, refreshable Braille display used for electronic access, and a read-out loud machine used in teaching Chinese. This is similar to what is obtainable in Temple man Library, University of Kent where there are special facilities that enable inclusive access to information, such as magnifiers which users with visual impairments can use to zoom in on text in books and other print formats. There are also assistive technology PCs in the library which have installed in them JAWS software for reading out loud; and high contrast keyboard (University of Kent, 2017).

Services Rendered to Ensure Access to Information for Inclusive Education
In the same vein, some studies demonstrate that libraries offer special services to persons with disability. Todd (2016) suggested six categories of services provided to persons with disability: physical space, collections, communications, staff development, programming and partnerships. The author pointed out that, through the Disability Act passed in 1990 in the United States, it is expected that library users with disability will have access to ramps, elevators, more convenient shelf height, large print books, closed captioned films, Braille, audio books, picture communication systems, etc. Fairfax County Public Library in Virginia offers services such as the talking books programs, assistive technology and equipment, books in alternative formats for people with visual impairments, and book delivery to readers who cannot visit the library (Fairfax County Public Library, 2015). In a more comprehensive way, Ohio Library for the Blind provides free library services for the blind and physically disabled through their Braille signage, Braille atlas, shelves that can be accessed by the visually impaired, audio readers, and a vast collection of digital talking books. Among their Braille collections are Entertainment and Sports Programming Network (ESPN) and Playboy magazines that can conveniently be read by the blind (Watts, 2016).

Libraries have begun to integrate functions on their website which allow for inclusive access to information, bearing in mind UNESCO's (2015) stance that "an accessible website provides equal opportunity for everyone to get information, learn, work and communicate." In this light, it is not surprising to see that the library in Southampton Solent University offers services to persons with disability via the library website (Solent Library, 2013). Library users who do not find it convenient to come to the library in person due to physical disability can use the Solent Library Chat on the homepage to ask questions online. The library also offers help to users who need to scan pages of books for screen reading software. For a small charge, library users can do enlarged photocopies. A special library catalogue access point is made available for wheelchair users.

Effectiveness of Services Rendered for Inclusive Education
Availability of information resources and services does not automatically translate to information accessibility and use (Ugwu, 2008; Nnadozie & Nnadozie, 2008). Some studies have attempted to assess or evaluate the effectiveness of the services offered in certain libraries for inclusive access to information. Going through these studies, disparities and similarities are both evident. Majinge and Stilwel (2013) assessed academic libraries in Tanzania in relation to services which they provide to people with visual impairments and who use wheelchairs. They found that the services were not inclusive; that is to say that

services being provided in these libraries were for people without disability. They concluded that this might be because there are no specially trained and experienced library staff to assist such people. In addition, some staff who serve persons with disability in the libraries are not trained on how to handle them. This finding reiterates Ndumbaro's (2009) observation that the needs of persons with disability are not considered in Tanzania when it comes to library services.

Surveying library and information services to physically-challenged students in academic libraries in Ogun State, Nigeria, Lawal-Solarin (2012) found that most of the respondents rated accessibility to textbooks and journals in their libraries to be low. The same goes for abstracts, indexes, theses and dissertations. Access to audiovisual materials and electronic services such as CD Rom, OPAC and online bibliographical sources were also rated low. The researcher also found out that the ramps leading to some library buildings do not lead to the main entrance of the library. In fact, the librarians said that the ramps were meant for trolleys used in bringing in newly acquired books. Hence, library users with disability often depend on friends, lecturers, personal books and laptops to get access to the information they need.

On the other hand, Rashid and Tesfaye (2016) in their study discovered that although the existence of this group of users was evident, there were no policies or official procedures to show this. They also found out that the available information services for physically disabled and hearing-impaired students in the university are reference books, teachers' handouts and worksheets; while the information services available for blind students is voice recording device only. In addition, the researcher found out that there was a lack of internet, assistive devices, and computers. Lawal-Solarin (2013) discovered that out of the twenty libraries studied, only 5 had elevators to link upper floors, 5 academic libraries have ramps at their entrances for wheelchair students, while 15 were without ramps. In addition, only 5 out of the 20 academic libraries were spacious enough to accommodate wheelchair students while 15 were not spacious.

Problems Faced by Challenged Students in Accessing Information
Historically, education for persons with disability has gone through a number of landmarks as indicated in the global development of special education. This development according to Terzi (2010) involved three main phases: segregation, integration and inclusion. There are many problems facing the implementation of inclusive access to information in developing countries such as Nigeria. Slee (2013) wrote that inclusive education suffers from collective indifference, lack of resources and the challenge of consistency, especially in impoverished communities; and Nigeria is not far from these. Although, the increased use of ICT in everyday life and the development of adaptive hardware and software have allowed individuals with disability to do things that were difficult or impossible to do in the past (Fichten et al., 2009), they still face challenges such as difficulty in accessing information for their academic studies. According to Samarina et al (2015), these challenges include:

- Very low competence of students with disability in using modern technology;
- Absence of infrastructure that provides students with disability with the necessary facilities according to the individual's disability;
- Librarians low competencies in helping students with disability;
- Absence of student's free and convenient access to libraries and other premises.

Similar to the position above is that of Okoli (2010) who mentioned that, in Nigeria, persons with disability face some challenges in using libraries such as the horrors of architectural buildings which have discouraged many of them getting education. Eskay and Chima (2013)

pointed out that the inadequacy of appropriate reading materials, lack of properly trained library professionals and architectural problems make up some of the problems. According to Ludstrom, Granlund and Hemmingson (2012) people with disability need extra skills, such as information processing, although some of them have the experience of distant learning. At basic level, most of them (80%) find it difficult to adapt while receiving further education in universities because CDs and talking books in Daisy format are less in Nigeria and many publishers are not providing electronic publications for visually impaired persons. In addition, there is no uniformity in copyright exceptions and exemptions for challenged persons throughout the world. Lack of awareness and inadequate infrastructural, human resources and financial resources are also very much in the picture.

The authors also pointed out that unavailability of assistive technology in the academic libraries has always resulted in disempowerment of the challenged persons. Conversely, visually challenged persons especially are unable to realize their potentialities to the best possible extent for self and nation building. To provide required information to disabled persons, library and information centers should be equipped with Assistive Technology which enables different people to access information and to perform their tasks effectively. To purchase the assistive technology requires a lot of funds which are not so easily available for the library. To provide independent access to library and information centers, Libraries need to modify their existing infrastructure such as entrance to the library book racks, height, spacing between racks and other ambience of libraries.

Problems Facing Institutions in Providing Required Services
Academic institutions such as universities face a lot of challenges while working to provide requisite environment for disabled students. Roberts, Crittenden & Crittenden (2011) outlined these challenges to include inadequate knowledge of the physical and mental capacities of disabled students. In some universities, there are no directions or specifications that take into consideration the educational needs of every student with a specific disability. Faculty-related barriers vary to include pedagogy, limited use of new technologies, negative attitudes towards disability or a lack of training in the field of disability. In recent years, distance learning has been in great demand, and it is generally accepted that the use of information technologies could eliminate barriers by promoting the inclusive education of university students (Seale et al., 2015). More specifically, students with disability could find themselves at a disadvantage when they fail to have the adequate technologies (Draffan, 2009). Such disadvantages include university web sites with accessibility problems or teaching materials that are not available on line (Kurt, 2011).

The attitude and willingness of the academic staff to implement changes and adapt their curriculum to the needs of these students are two of the critical factors necessary for the success of students with disability (Moriña et al., 2015). Another issue that appears in most disability research is the need to train the faculty in the specific needs of those with disability (Murray, Lombardi, & Wren, 2011). Therefore, Zhang et al. (2010) pointed out that "universities must implement mechanisms that guarantee programmed training for both professors and administrative staff," because, for persons with disability, university is an opportunity, an experience of empowerment, and is regarded as a vehicle for improving their quality of life (Fuller, Bradley & Hall, 2004; Moswela & Mukhopadhyay, 2011; Wehman, 2006).

Strategies to Enhance Information Access for Equitable Education for Students with Disability

Growing awareness about the needs, problems and potentialities of the challenged persons is compelling libraries to become accessible and inclusive. Assistive technology enables individuals with disability to execute tasks that are sometimes difficult or impossible to do without technical aid and helps them to achieve social inclusion (Bjekic et al., 2012). Hence, Guglielman (2010) wrote about e-learning designs which promote participation, allowing all students to take part in all subjects and activities, enhancing co-operative learning, offering powerful opportunities since learning is a social activity and understanding is socially constructed.

Web accessibility is important in order to provide equal access and equal opportunity to persons with disability. It offers the possibility of unprecedented access to information and interaction for persons with disability. Libraries are called to make their websites accessible in accordance with the guidelines and techniques specified by the Web Accessibility Initiative (WAI, 2005). The Convention on the Rights of Persons with Disability introduced in 2008 stressed that access to ICTs be made available to persons with disability (United Nations, n.d), and print materials should be available in alternate accessible formats (Braille, talking books, text, large print, etc.). The books in print must be converted to DAISY format, audio, or tactile form. In addition, all contents in different formats must be made accessible on the Internet.

Supporting learning with innovative technologies helps learners to overcome physical, transitory and cognitive barriers. Some authors such as Hockings, Brett, and Terentjevs (2012) and Pearson and Koppi (2006) established that introducing e-learning in the classroom was beneficial for students with disability. Barrier Break Technology (2012) asserts that libraries can make a large impact on the education of persons with disability by providing access to resources through screen reader and screen magnification support; alternate format services; accessible websites and digital library. According to Ejike and Amaoge (2015) "adequate funding to provide better facilities and services in libraries for the challenged is of paramount importance". Library authorities should have a written statement of policy on library services for persons with disability so that the policy may serve as guide during the planning of library services for them. In addition to that the library entrance must be accessible and convenient without obstacles to impede the movement of the special needs students. Adaptive technology should be put in place and the right environment should be created. In addition, appropriately designed signage and way finding system must be put from the main gate to all sections of the library because good signage goes a long way in making people independent in their interaction with and use of various facilities within the premises (Barrier Break Technology 2012). Training and retraining of librarians for optimum performance in their relationship with physically challenged clients is necessary.

Methodology
The study adopted qualitative research method. Federal university libraries in Nigeria formed the population for this study. The federal universities were chosen because, through the educational subsidy that they provide, they are known as populist and community academic institutions meant for universal education. This makes the population of federal universities higher in such institutions. Purposive sampling was done based on the six geopolitical zones in Nigeria. The zones are South-East, South-South, South-West, North-East, North-West and North-Central. One university was sampled from each zone based on the age of the university and availability of physically challenged students. The universities are shown in Table 1.

Data were collected through interview from the key informants which are the university librarians in the study universities, and also through focused group discussions with the physically challenged students. The researchers organized a day for the discussion with the students based on the students' convenience. During the discussion questions were asked and the students freely responded to them. Data collected were analyzed qualitatively, in line with the research questions. Based on the findings of the study, a model was designed to enhance the provision of information access for inclusive and quality education in Nigerian universities.

Table 1: Universities Studied

S/N	NAME OF UNIVERSITY	ZONE
1	University of Nigeria (UNN)	South East
2	University of Benin (UniBen)	South South
3	University of Ibadan	South West
4	Usumanu DanFodiyo University Sokoto (UDUS)	North West
5	Ahmadu Bello University Zaria (ABU)	North West
6	University of Jos (UniJos)	North Central

Discussion of Findings

The discussion is done based on four broad headings, according to the research questions.

For University of Nigeria (UNN) 9 visually impaired and 1 physically challenged person participated in the focus group discussion. In Usumanu Danfodiyo University Sokoto (UDSU) there were 3 physically challenged persons. In the University of Benin only 1 person was interviewed as the researchers could not access the others. The same number applies to University of Ibadan. In Ahmadu Bello University Zaria (ABU) 2 students were interviewed while in University of Jos 2 student were also interviewed. A total of eighteen students responded to the focus group interaction and three university librarians were interviewed, namely those of UNN, UDUS, and UniBen.

Availability of Facilities for Access to Information for Students with Special Needs

In all institutions studied, it was found that the students with special needs were willing to access information for education, but the lack of certain facilities in the libraries was inhibiting them. First among these was the unavailability of a special needs section. In some of the universities, the students reported that they do not have special services like a room dedicated for their use. This was confirmed by the university librarians of these universities. However, in other universities the students and university librarians confirmed that there are special needs section in their libraries. In UNN, which is a relatively large room with carrels and other special facilities which help the students in their studies open on the ground floor, offers easy access to students with disability. Most assistive technology is not available in these libraries although they facilitate inclusive access. In some of the libraries studied, it is difficult for students with disability to get access into the library building because of the design of the structure. So, some of these libraries have ramps with which physically challenged students can access the library. On getting into the library building they use mental images that they have created of the space to navigate. In addition, there are no provisions made of ICT facilities such as specially configured computers and Internet in some of the libraries for the special students. The same goes for Braille embossers in some of the libraries such as the one in UNN.

Effectiveness of the Services Rendered for Access to Information by Challenged Students
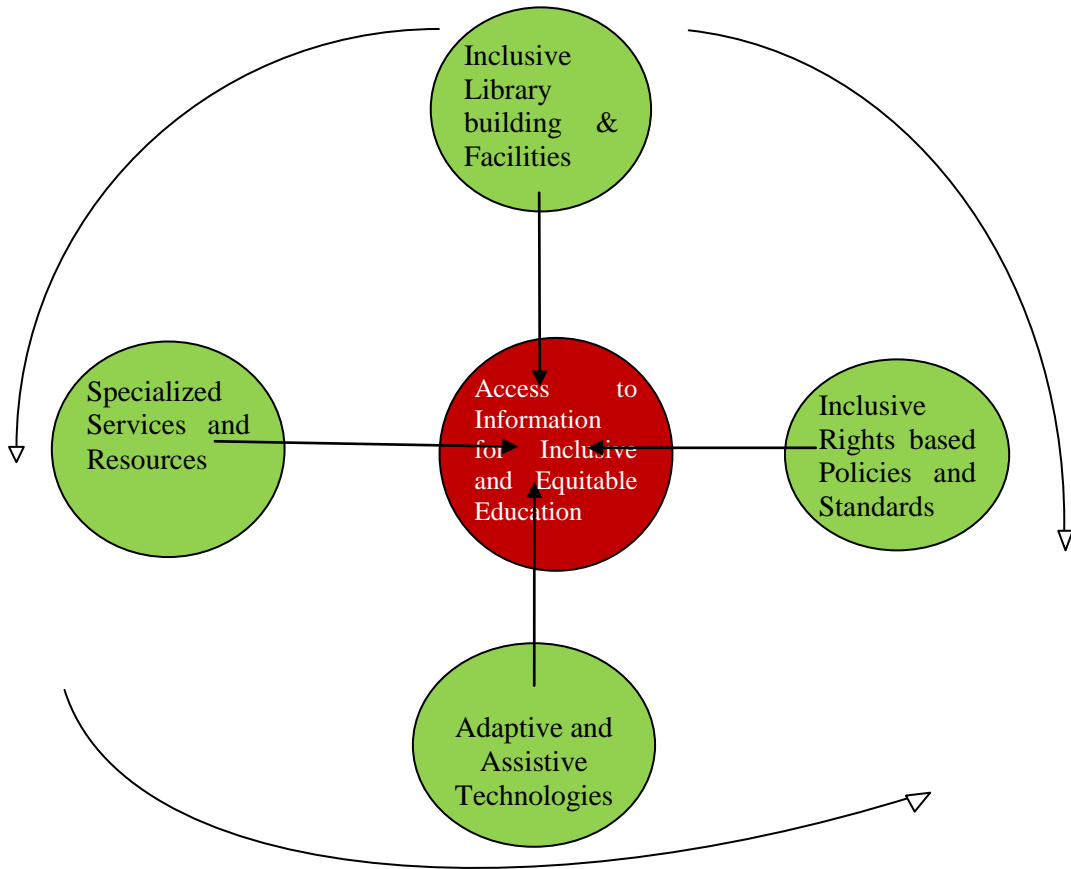
In libraries where students are able to access services, the students stated that they were satisfied with electronic resources and CDs. However, they have not used other library services such as abstracting and indexing, references, reservation, and interlibrary loan services. For books and journals, the students reiterated that it should be digitized to enable them read with screen-reading software. In the interviews, some university librarians mentioned that the library offers online database services, printing, reference and binding services to persons with disability. The students were generally happy and satisfied with the libraries' staff attitude to them. But this is not the case in some other libraries such as the ones in UDUS and ABU where students agreed that they have never received any service from the library and are not satisfied with library services respectively. This might be as result of the lack of a proper policy on how to handle this group of users as was made clear in the work of Rashid and Tesfaye (2016). Many of them use online resource (especially the blind) but most texts in the library are in print format. They need to be digitized for them to be accessible to this group.

Challenges Encountered in Accessing Information in University Libraries

In libraries with special needs section, the students identified a lot of challenges that hinder them from accessing information. The challenges include inadequate power supply and internet bandwidth are other challenges that they face. They also mentioned the lack of a Braille embosser to translate print materials to Braille, and the 4PM closing time for the special needs section which they say is not fair because they are being deprived study time. For libraries without special needs section, the students mentioned spacing, and the fact that, with their wheelchairs, they cannot access the library because the ground is not level. These findings are in line with the findings of Okoli (2010), and Eskay and Chima (2013) which suggest that, most times, the architectural design of library buildings poses a big challenge to students.

Strategies to Enhance Access to Information for Inclusive Education

To enhance information access for inclusive education, the students highlighted that their libraries should be equipped to meet global standards to enable them to compete favorably with other students. There is also the need to sensitize students and the university community on what is happening in the world of persons with disability. That they have physical or mental disability does not mean that they are less academically endowed. The students want the library resources to be put online so that, with ICT gadgets, people with disability can have access. In addition to that they want the ICT café upstairs brought downstairs so that they can take part in it. The university librarians agreed that there is more to be done concerning providing access to information for persons with disability. Some of them, such as the one in UNN, are already taking steps towards ensuring that there is steady electricity supply and steady internet services for this group in the special needs library. Students, such as those in UniJos, acknowledged that they need qualified and trained personnel specially employed for them. Employment of staff with special abilities should be done in the library to motivate people of special abilities and to enhance education. It is important that adequate funding should be made available to provide the facilities they need, as was observed by Ejike and Amaoge (2015).

Inclusive Library building & Facilities

Specialized Services and Resources

Access to Information for Inclusive and Equitable Education

Inclusive Rights based Policies and Standards

Adaptive and Assistive Technologies

A Researcher-Constructed Model for Inclusive Access to Information by Learners with Special Needs in Nigeria. May 2017.

The chat can be explained further showing the important elements required for inclusive access to information to ensure the achievement of SDGs. Table 2 showed that, though the topic is on inclusive access to Information for student with special needs towards achieving sustainable development goals: the role for academic libraries in Nigeria. Access to information will also enhance the achievement of other SDGs such as good health, poverty reduction, gender equality. Education is the key to achieving the SDGs, and for quality education access to information resources and facilities are important.

Table 2: Important Elements of Inclusive Access to Information to Ensure the Achievement of SDGs	
Inclusive Library Building and Facilities Building architecture that facilities access, e.g. ramps, lifts, escalators Inclusively fitted reading carrels, e.g., with walking stick slots. Photocopying and scanning facilities. Inclusively produced and located signage and way finding system. Accessible shelves with convenient heights. Controlled environment conducive for learning for all.	**Adaptive and Assistive** Technologies Voice recorders. Videos and chats. Screen readers and screen magnifiers. Accessible websites and online databases. Computer facilities with specialized software, e.g. JAWS. Equipment for e-learning. Braille Embosser. Refreshable Braille display. Text magnifiers and DAISY formatters. High contrast keyboards.
Inclusive Rights-based Policies, Strategies and Standards Written policies and procedures on inclusive services. Application of relevant national and international standards. Awareness of potentials of learners with special needs. Advocacy for equal opportunities for all. Inclusive teaching and learning methods. Dedicated funding and partnerships for inclusive facilities and services.	**Specialized Services and Resources** Trained personnel to provide services to special needs learners. Access to specially formatted digital content and online databases. Braille collection. Audio books and interactive books. Closed captioned film materials. Large print collections. Book delivery to homes of special needs clients. Socially inclusive services and programmes.

Conclusion

Access to information is necessary for inclusive and equitable education. Education is a vital necessity for everyone, as it enables each person to become capable enough to make contributions to society. Disability does not prevent people from being hardworking and productive. All that is needed is the enabling environment, including assistive technologies. The SDG is a wakeup call for the education sector to ensure access to information for inclusive education and this can be provided through a well-equipped library with competent personnel.

Recommendations

1   Standards and policies should be developed by each university library in Nigeria to cater for learners with special needs. Relevant national and international standards to should also be adopted, and advocacy and creation of awareness of equal learning opportunity for all instituted across the educational sector.

2   Inclusive access to the library should be ensures through provision of ramps, elevators and other structures that facilitate special needs students to move around and locate materials. Specially equipped sections can be created for students with disability to enable them feel free and connect easily to resources and services.

3   The provision of assistive technologies and learning aids should be made. Such facilities like computers with specialized software, videos, text magnifiers, and other items of equipment for e-learning, which form part of the modern trend in teaching and learning globally, should be introduced in libraries where they do not yet exist..

4   For blind students, the library should ensure that their needs are considered when they are selecting and acquiring reading materials.

5   Specially trained personnel should be deployed to render services to special needs learners. As the nation continues to advance, the population of disabled university students will increase. The drive to implement the UN 2030 Agenda for Sustainable Development is an opportunity to develop the required critical mass of specialised personnel to carter for this category of users.

Acknowledgments

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