

Use of Adaptive Technologies for Special Needs Students in Ekiti State University Library

Emeka C. UZOMBA¹, Olakunle K. ADEBAYO²(✉), Helen A. ADEYEMI³ & Chinyere J. UZOMBA⁴
^{1,2,3,4}Federal University Oye-Ekiti, P.M.B. 373 Oye-Ekiti, Ekiti State, Nigeria

Abstract

The study investigated the use of adaptive technologies for special needs students in Ekiti State University Library. Descriptive research design was used for this study. The population of this study consists of 168 special students in Ekiti State University and the total enumeration technique was adopted in this study. The findings of the study revealed that adaptive equipment technology available were braille equipment for visually impaired students, augmentative and alternative communication devices for non-verbal students and adaptive computer software for students with learning disabilities, wheelchairs and mobility scooters for students with mobility impairments among others. The finding also revealed the extent of use of AAC apps and software for communication and learning purposes and use of communication devices to express needs and thoughts effectively were high. It revealed the challenges affecting the effective use of adaptive equipment technology by special students in Ekiti State University Library which include; high cost of adaptive equipment, stigma associated with using adaptive equipment, inadequate collaboration between educators, therapists, and technology specialists in implementing adaptive equipment solutions among others.

Keywords

Adaptive Technologies; Special Needs Students; University Library

Corresponding Author (✉)

olakunle.adebayoa@fuoye.edu.ng
Federal University Oye-Ekiti, P.M.B. 373
Oye-Ekiti, Ekiti State, Nigeria

© Nigeria Library Association Enugu
State Chapter

Introduction

Libraries are essential spaces for learning, research, and access to information, but they can often present challenges for students with disabilities. Libraries are essential resources for information access, literacy development, research and education support, and cultural heritage preservation. In a school setting, people, particularly students, use information to inspire themselves, come up with ideas, learn new things, expand their knowledge, supplement their class notes, complete assignments, get ready for tests, make plans, read the news, and enjoy themselves. This posed the need for efficient access to information by the students. Every student, regardless of status, race, gender, age, and physical challenge, deserves the right to access information for decision making and the creation of knowledge (Omah, Solomon,

& Kente, 2023). Libraries are essential for creating an environment where people may learn, get information, and receive education. Dey and Bika (2023) stated that over the last decade, there has been increased focus on inclusive education, which aims to provide equitable access to education for all students, including those with special needs. Students with special needs are regarded as the physically challenged or people with disabilities or impairment. They are people that are in a state that restricts their ability to function physically, mentally or socially.

The term “special need” can also be defined as a physical or mental condition that prohibits an individual use of the body, partially or completely in performing daily tasks (Chaputula and Mapulanga, 2017). People who are physically unable to access library resources or who may not use the

standard information resources like other library patrons due to their unique circumstances are considered to have special needs. For a variety of reasons, people with special needs also use library and information resources. Among the goals could be research, education, leisure, etc. They are regarded as special library patrons. Abdullahi and Abubakar (2022) opined that special needs students, especially the visually, hearing and mobility impaired ones cannot conventionally access information in the same manner their unimpaired colleagues do, due to partial to total inability to see and observe information; partial to total inability to process oral information as a result of hard of hearing and deafness; and the weakness, pain, limitations of muscular control such as involuntary movements, lack of coordination, limitations of sensation, joint problems or missing limbs as a result of loss of muscular endurance, the paralysis and amputations.

The advent of electronic age and breakthrough in modern technologies has brought array of cutting-edge information technologies and adaptive technologies for special needs students to use to search and get information. Adaptive technology refers to devices, software, and modifications of existing tools that help individuals with disabilities overcome barriers and participate more fully in life by enhancing their ability to perform tasks. This specialized type of assistive technology enables people with visual, hearing, mobility, or other impairments to access information, communicate, and navigate their environment, thereby increasing their independence and improving their quality of life. Adaptive technology impacts the ability of special needs people to perform basic life functions such as hearing, seeing and mobility and enhances their functional performance to complete tasks that seems difficult or impossible by them.

Adaptive technologies are available as hardware, software, and web-based

resources, and can be computer hardware or software or electronic device (Alabi & Mutula, 2019). The primary objective of adaptive technologies is to improve the quality of life, safety, and independence of people with disabilities by allowing them to fully participate in society and partake in activities that might otherwise be difficult or impossible. Adaptive technology plays a crucial role in supporting students with special needs in the library environment

Statement of the Problem

Adaptive technologies play a crucial role in supporting students with special needs in academic libraries by providing them with access to resources to cater for their special needs. Despite efforts to create inclusive educational environments, students with special needs continue to face barriers that hinder their full participation and academic success. Within the library setting, which serves as a vital resource hub for students, the lack of adequate adaptive technologies exacerbates these challenges for special needs students as available information had shown.

The existing traditional setups of libraries often lack the necessary accommodations to address the diverse needs of students with disabilities or special requirements. Preliminary investigation at Ekiti State University showed that the challenges faced by students with special needs in accessing and utilizing library resources are multifaceted. These challenges may include physical barriers, such as inadequate ramps or elevators, which hinder mobility. Additionally, the unavailability of specialized tools and technologies within the library setting might limit the ability of special students to fully engage with educational materials. The lack of awareness and understanding among library staff regarding the specific needs of special students can contribute to a situation that is not favorable for achieving the best possible outcome. This ignorance may lead to unintentional exclusion and hinder the overall

learning experience for special needs students.

In spite of this, it has been observed to the best of researchers' knowledge that little or no effort has been made to address the issue of adaptive technologies for special needs students in the library with a special emphasis to Ekiti State university library. The need for alternative formats and technologies to cater for diverse learning styles and abilities becomes imperative. It is against this backdrop therefore, that the researcher deemed it necessary to address these issues.

Purpose of the Study

The purpose of this study is to investigate the use of adaptive technologies for special needs students in Ekiti State University Library. The specific objectives of the study are to:

- i. identify the types of adaptive technologies available for special needs students in Ekiti State University Library;
- ii. find out special needs students level of awareness on the use of adaptive technologies in the University Library;
- iii. ascertain the extent of use of adaptive technologies by special needs students in the University Library;
- iv. identify the challenges affecting the use of adaptive technologies by special needs students the University Library;
- v. determine the strategies to enhance effective use of adaptive technologies by special needs students in the University Library.

Literature Review

Adaptive or assistive technology refers to specialized tools and applications designed to help individuals with disabilities and age-related functional declines navigate daily life more effectively. These technologies aim to enhance independence and facilitate task completion, often through customized

solutions tailored to individual needs. Adaptive technologies are technologies that are specifically created, developed, and adapted or modified in a specific way to help people with special needs overcome challenges, enhance their functional independence, and be able to carry out tasks independently (Vincent, Okeowo, & Ariyo, 2024). The term 'special needs' in the context of library services as identified by Abdelrahman (2016) is connected to the needs of people who cannot make use of conventional libraries, library materials and services. They need assistance to navigate through the information materials available in libraries and new technologies in libraries which has increased access to communication and information globally. They are considered special because they need library services with unique resources, activities, tools, and attention. To efficiently manage their lives and exist in society, this group of people requires specialised information.

Adaptive technologies impact the ability of special needs students to perform basic life functions such as hearing, seeing, and mobility, and enhance their functional performance to complete tasks that seem difficult or impossible for them. They are available as hardware, software, and web-based resources, and can be computer hardware or software or an electronic device, including alternative formats of information (Alberta, Philip & Duffour, 2020). Adaptive technologies in the library is the use of specialized equipment and tools to help students with disabilities access and use library resources. With the help of these technologies, students with special needs such as those who have visual impairments, hearing impairments, mobility issues, or learning disabilities can easily explore library materials, carry out research, and participate in academic activities.

According to Abdullahi and Abubakar (2022), adaptive technologies includes items such as computers and/or electronics, the Internet

technologies, computers with ease-of-access features, the tactile tools, auditory tools, screen readers software, text reader software, talking browsers, Braille translation software, information enlargement and magnification technologies; sign language videos, sign language to text translator, speech to text translator, information description and instant messaging technologies; head mouse click helper technologies, eye mouse click helper technologies, touch screens, trackballs, head pointers, eye trackers, wands and sticks, speech recognition software for information seekers with visual, hearing and mobility impairments to sensed, listen effectively, see efficiently, navigate, browse, point at and click on information for access. Libraries may encourage equity and inclusivity in higher education by making adapted technologies accessible, allowing all students to use the library's services regardless of their abilities. By providing a range of adaptive technology options, university libraries can ensure that all students can access and benefit from the library's collections and services.

The use of assistive technologies seemingly serves as gateway to effective and efficient access to information and undoubtedly opening up huge opportunities to access both print and electronic information. (Abdullahi & Abubakar, 2022). Adaptive technology used in libraries to access information resources must be available to serve students with special needs in their personal, professional, and research endeavours. According to Ekwelem (2013), the availability of assistive technology entails acquiring and also providing means by which special needs users could get the necessary library resources needed. Availability ensures that every person with special needs gets the document, which could satisfy his/her quest for information (Hill, 2013). Libraries serve as essential hubs for education, research, and personal development, yet many individuals with disabilities face significant barriers in accessing information resources (Musa,

Auwalu, & Hassan, 2021). The incorporation of assistive technologies such as screen readers, braille displays, and adaptive software has been identified as a fundamental approach to ensuring equitable access to library services. However, despite advancements in digital accessibility and inclusive library services worldwide, challenges persist, particularly in developing nations, where infrastructural, financial, and policy-related constraints hinder the adoption of assistive technologies (Musa et al, 2021). Also, Bashir, Abdullahi and Onyemaechi (2021) noted that the challenges that hinder the use of adaptive technologies by the students with special needs include: lack of availability of resources, lack of trained instructors and absence of technical assistance, among others.

Sutar and Hande (2021) concluded that the use of assistive technologies in libraries for special needs students would certainly streamline them into the educational process without any lacunas and difficulty to access all types of resources. It will certainly help to improve the capabilities of visually impaired students, teachers and readers. Establishing a virtual learning environment where students with special needs may access all the resources they need to meet their educational needs should be a top priority for educational institutions.

Methods

The study adopted descriptive survey research design. The population of this study consists of all the special needs students in Ekiti University. The total population of special needs students comprised of one hundred and sixty eight (168). The sample size for this study consists of one hundred and sixty eight (168) special needs students in Ekiti State University, using total enumeration sampling technique. The instrument for data collection in this study was structured questionnaire and observation checklist which was divided into five clusters, and was designed to elicit information from

respondents strictly in line with the five specific purposes that guided the study. The data collected for this study was analyzed and presented in tabular form and analyzed with the use of percentage, frequencies and mean. A total of 168 respondents were targeted in

the distribution of the questionnaire for the study in Ekiti University, Ado-Ekiti, Ekiti State, Nigeria. A total of 150 copies were retrieved and valid for analysis. This gives a response rate of 89.3%.

Results

Table 1: Type of adaptive technologies available for special needs students in Ekiti State University Library

S/N	ITEMS	AVAILABLE	NOT AVAILABLE
1	Braille equipment for visually impaired students	✓	
2	Hearing aids for students with hearing impairments	✓	
3	Augmentative and alternative communication devices for non-verbal students		✓
4	Adaptive computer software for students with learning disabilities		✓
5	Text-to-speech software for students with reading difficulties	✓	
6	Adaptive keyboards and mouse devices for students with physical disabilities	✓	
7	Voice recognition software for students with mobility impairments		✓
8	Wheelchairs and mobility scooters for students with mobility impairments		✓
9	Specialized seating and positioning devices for students with physical disabilities		✓
10	Assistive listening devices for students with auditory processing disorders		✓
11	Sensory tools and equipment for students with sensory processing disorders		✓
12	Adaptive sports equipment for students with physical disabilities		✓
13	Communication boards and picture exchange systems for students with communication disorders		✓
14	Adaptive utensils and feeding devices for students with fine motor difficulties		✓
15	Personal emergency response systems for students with medical conditions	✓	

Table 1 Data collected through observation checklist revealed that braille equipment for visually impaired students, hearing aids for students with hearing impairments, text-to-speech software for students with reading difficulties, adaptive keyboards and mouse devices for students with physical disabilities and personal emergency response systems for students with medical conditions are available in the library, while augmentative and alternative communication devices, adaptive computer software for students with learning disabilities, Voice recognition

software for students with mobility impairments, wheelchairs and mobility scooters for students with mobility impairments, specialized seating and positioning devices for students with physical disabilities, assistive listening devices for students with auditory processing disorders, sensory tools and equipment for students with sensory processing disorders, adaptive sports equipment for students with physical disabilities, communication boards and picture exchange systems for students with communication disorders and adaptive

utensils and feeding devices for students with fine motor difficulties are not available in the library.

Table 2: Special needs student's level of awareness on the use of adaptive technologies in the University Library

S/N	ITEMS	Mean	SD
1	I am aware of communication devices (e.g. AAC devices, communication boards)	3.64	0.482
2	I am aware of mobility aids (e.g. wheelchairs, walkers, canes)	3.56	0.498
3	I am aware of writing aids (e.g. adaptive grips, weighted pens)	3.54	0.500
4	I am aware of sensory equipment (e.g. sensory swings, fidget tools, sensory mats)	3.52	0.501
5	I am aware of visual aids (e.g. magnifiers, braille labels)	3.52	0.576
6	I am aware of adaptive seating (e.g. specialized chairs, cushions)	3.48	0.540
7	I am aware of adaptive gaming controllers (e.g. adapted controllers for video games)	3.44	0.607
8	I am aware of augmentative and alternative communication (AAC) apps and software	3.38	0.720
9	I am aware of adaptive clothing (e.g. clothing with easy closures, sensory-friendly clothing)	3.34	0.740
10	I am aware of environmental control systems (e.g. smart home technology, voice-activated devices)	3.26	0.561
11	I am aware of behavioral tracking tools (e.g. behavior charts, timers)	3.24	0.514
12	I am aware of hearing aids (e.g. hearing amplification devices)	3.22	0.644
13	I am aware of computer accessories (e.g. specialized keyboards, trackballs)	3.20	0.602
14	I am aware of adaptive sports equipment (e.g. adapted bicycles, sports wheelchairs)	3.02	0.375
15	I am aware of adaptive eating utensils (e.g. utensils with built-up handles, plate guards)	2.98	0.764
Criterion Mean		2.50	

Table 2 shows the level of awareness of adaptive equipment technology by special needs students in Ekiti State University Library. Any individual mean greater or equal to criterion mean shows the agreement of the respondents that the level of awareness of adaptive technology by special needs students in Ekiti State University Library was high. The result revealed that the level of awareness of adaptive technology by special students in Ekiti State University Library was

high. These includes awareness of adaptive seating (e.g. specialized chairs, cushions), awareness of mobility aids (e.g. wheelchairs, walkers, canes), aware of writing aids (e.g. adaptive grips, weighted pens), aware of sensory equipment (e.g. sensory swings, fidget tools, sensory mats), aware of visual aids (e.g. magnifiers, braille labels) among others. The decision for regarding the items high was based on the fact that all the items recorded up to 2.50 criterion mean value and above which was set for decision rule.

Table 3: Extent of Use of Adaptive Technology by Special Needs Students in Ekiti State University Library

S/N	ITEMS	Mean	SD
1	I use AAC apps and software for communication and learning purposes	2.80	1.316
2	I use communication devices to express needs and thoughts effectively	2.52	1.422
3	I use mobility aids to move around independently and safely	2.34	1.263
4	I use writing aids to improve handwriting and fine motor skills	2.34	0.684
5	I use behavioral tracking tools to monitor and improve behavior	2.26	0.629
6	I use adaptive gaming controllers for recreational activities	1.98	0.549
7	I use environmental control systems to control classroom environment	1.96	0.633
8	I use computer accessories to access digital learning materials	1.84	0.949
9	I use adaptive seating to provide comfort and support during class	1.82	0.890
10	I use adaptive eating utensils to improve feeding skills	1.56	0.728
11	I use adaptive clothing to promote independence in dressing	1.54	0.783
12	I use adaptive sports equipment to participate in physical activities	1.48	0.501
13	I use visual aids to enhance visual learning and understanding	1.46	0.987
14	I use hearing aids to improve communication and interaction	1.22	0.462
15	I use sensory equipment to regulate sensory input and stay focused	1.18	0.385
Criterion Mean		2.50	

Table 3 shows the extent of use of adaptive equipment technology by special needs students in Ekiti State University Library. The criterion mean is 2.50. Any individual mean greater or equal to criterion mean shows the agreement of the respondents that the extent of use of adaptive technology by special needs

students in Ekiti State University Library was high. Majority of the respondents agreed that the extent of use of AAC apps and software for communication and learning purposes (Mean = 2.80) and use of communication devices to express needs and thoughts effectively (Mean = 2.52) were high.

Table 4: Challenges Affecting the Use of Adaptive Technology by Special Needs Students in Ekiti State University Library

S/N	STATEMENT	Mean	SD
1	High cost of adaptive technologies	3.74	0.440
2	Stigma associated with using adaptive technologies	3.74	0.440
3	Inadequate collaboration between educators, therapists, and technology specialists in implementing adaptive solutions.	3.74	0.440
4	Lack of customization options for individual student needs	3.68	0.468
5	Limited availability of training and resources for using adaptive technologies	3.66	0.475
6	Limited awareness and understanding of the benefits of adaptive technologies	3.66	0.475
7	Resistance from students in accepting and using adaptive technologies	3.66	0.554
8	Inadequate support from teachers and school staff in using adaptive technologies	3.64	0.482
9	Lack of access to appropriate adaptive technologies	3.58	0.637
10	Limited research and development in adaptive technology for special needs students	3.46	0.500
11	Incompatibility with existing classroom technology and curriculum	3.44	0.498
12	Lack of standardized guidelines for selecting and using adaptive technologies	3.42	0.495
13	Difficulty in integrating adaptive equipment into the classroom environment	3.38	0.487
14	Limited opportunities for students to practice and develop proficiency in using adaptive technologies	3.36	0.482
15	Limited funding for purchasing, maintaining, and updating adaptive technologies	3.24	0.473
Criterion Mean		2.50	

Table 4 shows the challenges affecting the effective use of adaptive technology by special needs students in Ekiti State University Library. The criterion mean is 2.50. Any individual mean greater or equal to criterion mean shows the agreement of the respondents with the challenges affecting the use of adaptive technology by special needs students in Ekiti State University Library. Majority of the respondents agreed that the challenges affecting the use of adaptive technology by special needs students in Ekiti State University Library were high cost of

adaptive technology (Mean = 3.74), stigma associated with using adaptive technology (Mean = 3.74), inadequate collaboration between educators, therapists, and technology specialists in implementing adaptive solutions (Mean = 3.74), lack of customization options for individual student needs (Mean = 3.68), limited availability of training and resources for using adaptive technology (Mean = 3.66), limited awareness and understanding of the benefits of adaptive technology (Mean = 3.66) and resistance from students in accepting and using adaptive technology (Mean = 3.66).

Table 5: Strategies to Enhance Effective Use of Adaptive Technology by Special Needs Students in Ekiti State University Library

S/N	STATEMENT	Mean	SD
1	Providing comprehensive training and instruction on how to properly use the adaptive technology	3.82	0.385
2	Seeking input from students and their families on the selection and implementation of adaptive technology	3.76	0.429
3	Providing opportunities for students to practice and familiarize themselves with the adaptive technology	3.72	0.451
4	Encouraging collaboration and communication between students, teachers, and support staff when using the adaptive technology	3.66	0.475
5	Building partnerships with assistive technology specialists and experts to stay informed of the latest advancements and best practices in adaptive technology.	3.66	0.475
6	Regularly assessing and evaluating the effectiveness of the adaptive technology and making necessary adjustments	3.60	0.492
7	Offering individualized support and assistance tailored to each student's unique needs and preferences	3.58	0.495
8	Providing ongoing professional development and training for teachers and support staff on the effective use of adaptive technology	3.58	0.495
9	Using a variety of teaching methods, such as hands-on demonstrations and visual aids, to enhance understanding and retention of how to use the adaptive technology	3.58	0.495
10	Encouraging independence and autonomy in the use of adaptive technology	3.54	0.500
11	Ensuring that the adaptive equipment technology is properly maintained and in good working condition	3.54	0.500
12	Considering the preferences and interests of students when selecting adaptive technology	3.50	0.502
13	Creating a supportive and inclusive learning environment that promotes the use of adaptive technology	3.48	0.501
14	Creating a positive and supportive peer culture that promotes acceptance and understanding of the adaptive technology	3.42	0.495
15	Incorporating the adaptive technology into daily routines and activities to ensure consistent usage	3.20	0.401
Criterion Mean		2.50	

Table 4.6 shows the strategies to enhance effective use of adaptive technology by special needs students in Ekiti State University Library. The criterion mean is 2.50. Any individual mean greater or equal to criterion mean shows the agreement of the respondents with the strategies to enhance effective use of adaptive technology by special needs students in Ekiti State University Library. Majority of the respondents agreed that the strategies to enhance effective use of adaptive technology by special needs students in Ekiti State University Library were providing comprehensive training and instruction on how to properly use the adaptive technology (Mean = 3.82), seeking input from students and their families on the selection and implementation of adaptive technology (Mean = 3.76), providing opportunities for students to practice and familiarize themselves with the adaptive technology (Mean = 3.72), encouraging collaboration and communication between students, teachers, and support staff when using the adaptive technology (Mean = 3.66), building partnerships with assistive technology specialists and experts to stay informed of the latest advancements and best practices in adaptive technology (Mean = 3.66), regularly assessing and evaluating the effectiveness of the adaptive technology and making necessary adjustments (Mean = 3.60), offering individualized support and assistance tailored to each student's unique needs and preferences (Mean = 3.58) and providing ongoing professional development and training for teachers and support staff on the effective use of adaptive technology (Mean = 3.58).

Discussion of Findings

The findings of this study were discussed in line with the specific purposes of the study. The discussion takes the following subheadings:

Type of Adaptive Technologies Available for Special Needs Students in Ekiti State University Library

The findings of this study in respect to adaptive technologies available for special needs students in Ekiti State University Library shows that most of the technologies are not available. These include augmentative and alternative communication devices, adaptive computer software for students with learning disabilities, Voice recognition software for students with mobility impairments, wheelchairs and mobility scooters for students with mobility impairments, among others. This is in collaboration with Abdullahi and Abubakar (2022), who stated that adaptive technologies includes items such as computers and/or electronics, the Internet technologies, computers with ease-of-access features, the tactile tools, auditory tools, screen readers software, text reader software, talking browsers, Braille translation software, information enlargement and magnification technologies; sign language videos, sign language to text translator, speech to text translator, information description and instant messaging technologies; head mouse click helper technologies, eye mouse click helper technologies, touch screens, trackballs, head pointers, eye trackers, wands and sticks, speech recognition software for information seekers with visual, hearing and mobility impairments to sensed, listen effectively, see efficiently, navigate, browse, point at and click on information for access.

Special Needs Student's Level of Awareness on the Use of Adaptive Technologies in the University Library

The findings of this study as regards the level of awareness of adaptive equipment technology by special needs students in Ekiti State University Library revealed that it was high. These includes awareness of adaptive seating (e.g. specialized chairs, cushions), awareness of mobility aids (e.g. wheelchairs, walkers, canes), aware of writing aids (e.g.

adaptive grips, weighted pens), aware of sensory equipment (e.g. sensory swings, fidget tools, sensory mats), aware of visual aids (e.g. magnifiers, braille labels) among others. The finding agrees with Abdullahi and Abubakar (2022) who found that many students were aware of the range of adaptive technologies available to them.

Extent of Use of Adaptive Technology by Special Needs Students in Ekiti State University Library

The findings of the study revealed that the extent of use of AAC apps and software for communication and learning purposes and use of communication devices to express needs and thoughts effectively were high. This is in line with the findings of Chaputula and Mapulanga (2017) who stated that for a variety of reasons, people with special needs also use adaptive technologies. Among the goals could be research, education, leisure, etc.

However, the study revealed that the extent of use of some adaptive technologies was low. These include use computer accessories to access digital learning materials, use sensory equipment to regulate sensory input and stay focused, use of adaptive gaming controllers for recreational activities among others. This corroborates the view Bashir, Abdullahi and Onyemaechi (2021) who noted that the challenges that hinder the use of adaptive technologies by the students with special needs include: lack of availability of resources, lack of trained instructors and absence of technical assistance, among others.

Challenges Affecting the Use of Adaptive Technology by Special Needs Students in Ekiti State University Library

The findings of the study revealed that majority of the respondents agreed the challenges affecting the use of adaptive technology were high cost of adaptive technologies, stigma associated with using adaptive technologies, inadequate collaboration between educators, therapists,

and technology specialists in implementing adaptive equipment solutions, lack of customization options for individual student needs, limited availability of training and resources for using adaptive equipment among others. The finding agrees with Musa et al (2021) who reported that despite advancements in digital accessibility and inclusive library services worldwide, challenges persist, particularly in developing nations, where infrastructural, financial, and policy-related constraints hinder the adoption of assistive technologies.

Strategies to Enhance Effective Use of Adaptive Technology by Special Needs Students in Ekiti State University Library

The findings of the study revealed that majority of the respondents agreed the strategies to enhance effective use of adaptive technology were providing comprehensive training and instruction on how to properly use the adaptive technology, seeking input from students and their families on the selection and implementation of adaptive technology, providing opportunities for students to practice and familiarize themselves with the adaptive technology, encouraging collaboration and communication between students, teachers, and support staff when using the adaptive technology, building partnerships with assistive technology specialists and experts to stay informed of the latest advancements and best practices in adaptive technology among others. The finding agrees with Sutar and Hande (2021) who revealed that the use of assistive technologies in libraries for special needs students would certainly streamline them into the educational process without any lacunas and difficulty to access all types of resources. It will certainly help to improve the capabilities of visually impaired students, teachers and readers. Establishing a virtual learning environment where students with special needs may access all the resources they need to meet their educational needs

should be a top priority for educational institutions.

Conclusion

This study examined adaptive technology for special needs students in Ekiti State University Library. From the findings of the study, the adaptive technology available in the library is very essential, hence it has become expedient to ascertain that lecturers, students and other information users of the library utilize these resources in other to promote research, academic performance, teaching and learning. This is to say that the utilization of adaptive technology for supporting special needs students is of great importance as it adds value to university's teaching and learning, research, publication and dissemination activities by providing excellent information services and which foster the usage of adaptive technology. In furtherance, challenges affecting the use of adaptive technology include; high cost of adaptive technology, stigma associated with using adaptive technology, inadequate collaboration between educators, therapists, and technology specialists in implementing adaptive technology solutions, lack of customization options for individual student needs, limited availability of training and resources for using adaptive technology, limited awareness and understanding of the benefits of adaptive technology and resistance from students in accepting and using adaptive technology.

Recommendations

The following recommendations are proffered based on the findings of the study:

- i. Library management in conjunction with university management should offer workshops, online tutorials, and one-on-one training sessions for students, lecturers, and support staff to train them on the effective use of adaptive technologies.
- ii. Library management should build partnerships with assistive technology specialists and experts to stay informed of the latest advancements and best practices in adaptive equipment technology.
- iii. Lecturers in conjunction with library management should offer individualized support and assistance tailored to each student's unique needs and preferences.
- iv. Library management should conduct regular surveys to gather feedback from students, parents, and lecturers on the effectiveness of adaptive technology in meeting the needs of special students.
- v. Library management should provide librarians with user-friendly skills and technology training to enhance their interaction with students.

REFERENCES

- Abdelrahman, O. H. (2016). Use of library technology and services by the visually impaired and the blind in the University of Khartoum, Sudan. *DESIDOC Journal of Library and Information Technology*, 36(2), 93 -97.
- Abdullahi, A. S. and Abubakar, S. (2022) . Challenges in using assistive technologies for information access by the special needs students. *MBJLIS – Middlebelt Journal of Library and Information Science*, (20) <file:///C:/Users/Admin/Downloads/186-Article%20Text-291-1-10-20221118.pdf>
- Alabi, A. O. & Mutula, S. M. (2019). Digital inclusion for visually impaired students through assistive technologies in academic libraries. *Library Hi Tech News*. Emerald Publishing Limited, 0741-9058. DOI 10.1108/LHTN-11-2019-0081
- Alberta, A. W., Philip, N., & Duffour, F. A. (2020). Adaptive technology for supporting persons with disability in selected public academic libraries in Ghana. *Library Philosophy and Practice (e-journal)*. <https://digitalcommons.unl.edu/libphilprac/4435/>
- Atabor, C. A. (2015). Information needs and use of library resources by special needs students

- in selected government schools in Kaduna State and Federal Capital Territory, Abuja, Nigeria. *Chinese Librarianship: An International Electronic Journal*, 40, 47-55. URL: <http://www.iclc.us/cliej/cl40atabor.pdf> on 12th August, 2023
- Bashir, I. W., Abdullahi, M., & Onyemaechi, N. P. (2021). Integrating assistive technology for students with learning disabilities in universities in Nigeria. *International Journal of Scientific and Research Publications*, 11(4), 219-225
- Chaputula, A. H., & Mapulanga, P. (2017). Provision of library services to people with disabilities in Malawi. *South African Journal of Libraries and Information Science*, 82(2), 1–10. Retrieved from: <https://doi.org/10.7553/82-2-1619> on 8th September, 2023.
- Dey, N., & Bika, S. (2023). The journey towards inclusive and equitable education for students with disabilities in India. *Research Review International Journal of Multidisciplinary*, 8(3), 65–71. <https://doi.org/10.31305/rrijm.2023.v08.n03.009>
- Ekwelem, V. O. (2013). Library services to disabled students in the digital era: challenges for outcome assessment. <https://digitalcommons.unl.edu/libphilprac/970/>
- Hill, H. (2013) Disability and accessibility in the library and information science literature: A content analysis. *Library and Information Science Research* 35(2):137–142
- Musa, A. A., Auwalu, D. Y., & Hassan, M. (2021). Use of assistive technologies in libraries by persons with special needs: A catalyst for access to quality education. *The Special Educator*, 20(1), 39–47.
- Omah, J.E., Solomon, M.L., Kente, J.I.S. (2023). Academic Library Provision of Services For Special Students. *Inter. J. Acad. Lib. Info. Sci*, 11(7), 283-290. <https://www.academicresearchjournals.org/JALIS/PDF/2023/November/Omah%20et%20al.pdf>
- Sutar, D. B. & Hande, S. A. (2021). Assistive Technologies in Libraries for Visually Impaired Students and Teachers. *Library Philosophy and Practice (e-journal)*. <https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=12039&context=libphilprac>
- Vincent, D. A., Okeowo, R. O., & Ariyo, S., (2024). The use of assistive technology in technical colleges for students with disabilities in Ondo State. *Journal of Educational Research and Practice*, 14, 52–67. <https://doi.org/10.5590/JERAP.2024.14.1.04>