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USE OF ICT IN LIBRARY AND INFORMATION SERVICES DELIVERY FOR STUDENTS WITH SPECIAL NEEDS IN NIGERIA

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Abstract

The integration of Information and Communication Technology (ICT) in library and information services delivery has significantly enhanced accessibility and learning opportunities for students with special needs. This paper examines the various applications of ICT that facilitate inclusivity, discussing tools, technologies, and practices that libraries have adopted to cater to their diverse needs. It discovers the benefits of these technologies, and tools including improved access to information, personalized learning experiences, and enhanced independence for students with special needs. The article also addresses the challenges and considerations in implementing ICT solutions in library services delivery, emphasizing the importance of ongoing training and support for both library staff and users. In conclusion, the integration of ICT into library services delivery offers numerous benefits for students with special needs, including enhanced accessibility, personalized learning experiences, increased independence, AR/VR applications, mobile solutions and the creation of an inclusive learning environment. Through a comprehensive review of current practices and literature, this article highlights the critical role of ICT in creating inclusive educational environments.

Keywords: ICT in Libraries, Special Needs Students, Library Services, Information Services Delivery, Inclusive Education, Digital Inclusion

Introduction

Information and Communication Technology (ICT) has revolutionized how information is accessed and disseminated in libraries, particularly benefiting students with special needs. According to Adam and Musa (2024), the incorporation of ICT into library and information services delivery has enabled libraries to provide more inclusive and accessible resources, ensuring that all students have equal opportunities to learn and succeed in their academic endeavors. ICTs can assist library staff to professionally and successfully ease the provision of quality library and information service delivery to students with special needs.

The quality of library and information services delivery are mainly determined by library users satisfaction with the services provided based on their information need. Igbinovia (2022) submits that the concept of service delivery in libraries entails the act of providing library users with the necessary professional assistance required to meet their information needs. This assistance is fragmented into two i.e., direct and indirect services which constantly need to be improved upon to catch up with the ever-changing information needs of the 21st century library users. The direct library services involve personalized assistance to meet the needs of students with special needs, including adoptive reference services, assistive technology training, sensory-friendly spaces and accessible story times and programs (Wentz, Jaeger & Berlot, 2015). While indirect library services involve behind-the-scenes efforts to improve accessibility such as accessible cataloging and metadata, digital accessibility compliance, universal design for learning (UDL) in library instruction and collaboration with disability services (Schmetzke, 2018). In the same line, Akpokodje and Lawal (2015) called on libraries to constantly seek ways to deliver enhanced services to the users. Enhancing library services for the users aims to provide them with a quality service.

In this direction, one of the main goals of modern library is to provide information services delivery in an inclusive setting by acquiring relevant information resources, equipment and facilities to facilitate access to information by all users (Adam & Musa, 2024). One of the reasons behind inclusiveness is to ensure equal opportunities are given to all users as some library users may have one form of deformity or the other usually refers to students with special needs. Students with special needs are regarded as physically challenged or students with disabilities or impairments.

In light of the above, Atabor (2015) opined that the terms, impairment, physically challenged, handicapped, disabled, and special needs persons are used interchangeably They are people that are in a state that restricts their ability to function physically, mentally or socially. Ananya (2013) identified those with physical challenges to include those who have long term physical, mental, intellectual or sensory impairments which may hinder their full and effective participation in society on an equal basis with others, hence, their need for special attention.

From the foregoing, the use of ICTs for the provision of library and information service delivery for students with special needs assist them have access to the resources and facilities that best suit their needs. Based on this background, the researchers explore use of ICTs for provision of library and information services delivery to students with special needs.

Applications of ICT in Library Services Delivery

Libraries play a crucial role in providing access to information services and resources for all individuals, including those with special needs (Jadav,2024). With advancements in Information and Communication Technologies (ICTs), libraries can enhance their services to cater specifically to the needs of students with special needs. The ICTs applicable in library services delivery that offer various opportunities for enhancing services for students with special needs include, among others (Ezeani,Ukwoma, Gani & Agunwamba (2017).

Assistive Technologies

Assistive technologies are specialized tools designed to support individuals with disabilities in accessing information. These include screen readers, magnification software, and text-to-speech programs, which are particularly beneficial for students with visual impairments (Hersh & Johnson, 2010). For instance, screen readers convert digital text into synthesized speech, allowing visually impaired students to listen to written content (Smith & Anderson, 2019). Assistive technologies (AT) according to Doiron, (2020) encompass a wide range of devices, software, and hardware designed to support individuals with disabilities in performing tasks that may otherwise be challenging or impossible for them. In a library settings, at can include magnification tools, adaptive keyboards, and alternative input devices. These technologies enable students with visual impairments, motor disabilities, or learning disabilities to access and interact with library resources effectively.

Digital and Audiobooks

Digital and audiobooks provide alternative formats for reading materials, making them accessible to students with visual impairments, dyslexia, or other reading difficulties. Libraries can offer extensive collections of digital and audiobooks through online platforms, ensuring that students with special needs have access to the same content as their peers (Burgstahler, 2012).

Adaptive Software

Adaptive software, such as speech recognition and word prediction programs, assists students with physical disabilities or learning difficulties in writing and communication tasks. These tools can be integrated into library services to support students in conducting research, completing assignments, and engaging in collaborative projects (Shinohara & Wobbrock, 2011 and Gaskell, 2018). According to Irani, Nguyen, Shengi & Larson (2019) collaborative software applications

also enable students with diverse needs to collaborate on projects, share resources, and participate in group discussions remotely.

Accessible Online Resources

Libraries are increasingly providing online resources that are designed to be accessible to all users. This includes websites and databases with customizable interfaces, allowing students to adjust text size, contrast, and layout according to their needs (Jaeger & Bertot, 2010 and Gaskell, 2018). Additionally, ensuring that digital content is compatible with assistive technologies is crucial for accessibility.

Augmented Reality (AR) and Virtual Reality (VR)

AR and VR technologies have the potential to transform the learning experiences of students with special needs by providing immersive and interactive environments. In library settings, AR and VR applications can be used to create virtual tours of library spaces, simulate real-world scenarios for information literacy instruction, or offer multisensory experiences for storytelling and content exploration (Aldana-Montes & Pesántez-Avilés, 2018). These technologies cater to different learning styles and preferences, making library resources more engaging and accessible for students with special needs.

Mobile Applications

Mobile applications designed specifically for students with special needs can enhance their access to library services and resources on-the-go. These applications may include features such as voice-controlled search functionalities, personalized recommendations based on user preferences, and location-aware services to assist users in navigating library spaces (Riyazuddin, Pratiksh, Groud & Padmavathamma, 2021). Irani, Nguyen, Shengi and Larson (2019) states that ICTs offer numerous Mobile Applications / communication tools that facilitate interaction and engagement

among students with special needs and library staff. Video conferencing platforms equipped with closed captioning features or sign language interpretation services enhance communication accessibility for individuals who are deaf or hard of hearing

By leveraging the ubiquity of mobile devices, libraries can ensure that students with special needs have convenient access to library resources anytime, anywhere.

Benefits of ICT in Library Services for Students with Special Needs

The application of ICT in library services offers numerous benefits for students with special needs, including:

Enhanced Accessibility

One of the most significant benefits of ICT in library services is the enhanced accessibility it provides. Traditional print materials can be inaccessible to students with visual impairments, physical disabilities, or learning difficulties. ICT tools such as screen readers, magnification software, and braille displays enable students with visual impairments to access digital texts independently (Hersh & Johnson, 2010). Screen readers convert text into synthesized speech, allowing visually impaired students to listen to written content, while magnification software enlarges text and images for those with low vision (Smith & Anderson, 2019).

Digital and Audiobooks

Digital and audiobooks are crucial ICT resources that cater for the needs of students with various disabilities. These formats are especially beneficial for students with dyslexia or other reading difficulties, as they offer alternative ways to engage with text. Audiobooks provide auditory learning opportunities, which can be easier to process for some students compared to traditional reading (Burgstahler, 2012). Furthermore, digital books often come with adjustable text sizes and

background colors, which can help students with visual impairments or contrast sensitivity (Mates, 2011).

Personalized Learning

ICT enables personalized learning experiences tailored to the individual needs of students. Adaptive learning technologies can adjust the pace and difficulty of content based on the student's performance and preferences. For example, speech recognition software allows students with physical disabilities to dictate text, reducing the need for manual input (Raskind & Higgins, 1998). Similarly, word prediction software helps students with learning disabilities by suggesting words as they type, facilitating faster and more accurate writing (Shinohara & Wobbrock, 2011).

Independence and Self-Reliance

The use of ICT in libraries empowers students with special needs by promoting independence and self-reliance. Accessible online catalogs and digital resources enable students to conduct research and access information without needing constant assistance from library staff (Seale, 2014). This autonomy not only boosts their confidence but also encourages self-directed learning, which is critical for academic success and lifelong learning (Jaeger & Bertot, 2010).

Interactive and Engaging Learning Materials

ICT provides access to a wide range of interactive and multimedia learning materials that can make the learning process more engaging and enjoyable for students with special needs. For instance, educational apps and software programs often include interactive elements such as quizzes, games, and simulations, which can help to maintain students' interest and motivation (Hehir, Sehifter, Grindal & Eiderlman, 2016). Multimedia resources, such as videos and animations, cater to different learning styles and can make complex information more understandable (Burgstahler, 2012).

Inclusive Learning Environment

ICT helps create a more inclusive learning environment by ensuring that all students, regardless of their abilities, can access the same educational resources. This inclusivity fosters a sense of belonging and equality among students, which is essential for their social and emotional development (Hehir, Sehifter, Grindal & Eiderlman, 2016). Libraries that offer ICT resources and services demonstrate a commitment to inclusivity and accessibility, setting a positive example for the broader educational community (Cox & Emmott, 2020).

Challenges and Considerations

While the benefits of ICT in library services for students with special needs are substantial, there are challenges to consider. The cost of acquiring and maintaining assistive technologies can be a significant barrier for many libraries (Lynch, 2010). Additionally, library staff requires ongoing training to stay updated on the latest ICT tools and best practices for supporting students with special needs (Cox & Emmott, 2020). There is also a need for increased awareness and promotion of these resources to ensure that students and educators are aware of and can effectively utilize the available technologies (Mates, 2011).

Conclusion

The paper concluded that the integration of ICT into library services delivery offers numerous benefits for students with special needs, including enhanced accessibility, personalized learning experiences, increased independence, AR/VR applications, mobile solutions and the creation of an inclusive learning environment. While challenges such as cost and the need for training exist, the positive impact of ICT on the educational experiences of students with special needs is

undeniable, ICTs play a vital role in promoting inclusivity, accessibility, and engagement in library environments. By embracing these technologies, libraries can play a pivotal role in supporting the academic success and overall development of all students, regardless of their abilities or disabilities.

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