

## **AVAILABILITY OF ASSISTIVE TECHNOLOGY TOOLS FOR DIFFERENT FORMS OF SPECIAL NEEDS AT SCHOOL FOR SPECIAL NEEDS, OYUN, KWARA STATE**

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### **Abstract**

*Special Needs Children are children with certain peculiarities which are sometimes interpreted as meaning students that are not smart, talented or capable. However, these students only have challenges that normal students do not face and as such requires the use of assistive technologies to carry out tasks. This study identified the different disability types among special needs children in School for Special Needs in Kwara State and also ascertained availability of assistive technology tools for the different types of disabilities found in the school for special needs. The research design adopted for the study was narrative qualitative research using interview to obtain needed information from the administrator of the school. An interview protocol with a checklist were utilised as instruments for the study. Five different forms of disabilities were identified among the students and a number of associated assistive technologies were seen as available to cater for the students' needs in the school. The study concluded that five forms of disabilities are taken care of in Ilorin and there are Assistive Technologies for each category available and . recommends that Kwara State special needs school should strive to achieve the enrolment without discrimination as decreed in IDEA and further echoed by Nigerian National Policy on Special Education.*

**Keywords:** Special needs, Forms of disability, Assistive technologies, Physical disabilities, Learning disabilities, Language disorder, School for special needs.

### **Introduction**

Education is a lifelong process that transcends boundaries and generations. Its primary purpose is to teach learners how to live in real life by developing their minds and equipping them to deal with reality (Ahmed, 2018). Education is imperative for social, economic and political development of any nation. Most nations or countries across the globe have recognized education as critical for social and economic development. United Nations Educational, Scientific and Cultural Organisation (UNESCO, 2018) described education as a vital instrument for transformation and formidable tool for empowerment of individuals. In other words, education is seen as an essential instrument and indispensable tool for national development.

No nation of the world ever attained any meaningful development without education leading to it. Lack of access to education or exposure to the wrong kind of education can contribute to persistent inequality, prejudice and renewed armed conflicts, a vicious cycle that is difficult to break United Nations Educational, Scientific and Cultural Organisation (UNESCO, 2018). Education remains the instrument for national and personal development. It is the major foundation which enhances individuals who would be able to make successful living and can

contribute meaningfully to the social-economic and political development of any society and a nation in general. Education is a process where individuals acquire skills, values and other necessary knowledge that will help him/her fit into the society and contribute meaningfully to its development.

Education is generally acknowledged as an instrument for fostering the worth and development of individual for individual sake and for general development of the society. One of the major goals of education is that every child shall have a right to equal educational opportunities, irrespective of any real or imagined disabilities, each according to his/her ability National Policy on Education of the Federal Republic of Nigeria (FRN, 2018).

However, this policy may not have adequately catered for children with special needs that requires special education (Eskay *et al.*, 2012). Etieyibo and Emiegbe (2016) opined that the deeply ingrained cultural beliefs about people with disabilities and their alleged mistreatment by some school owners and administrators cannot be overlooked. Because of negative societal perceptions, teacher training and certification in special education are not maintained, and these in turn, affect funding of special education. These cultural beliefs have continued to influence the formulation and implementation of special education policies and setting up of special needs schools.

The Nigerian school system, particularly the primary and secondary schools, has undergone some changes due to the adoption of the policy of inclusive education. This means more students with special education needs are now educated in the same class with other children that do not have any special education need. The special and regular teachers are vested with the responsibility of making the curriculum accessible to the children with special education needs; this they do by adopting different tools and devices. Many institutions makes carers and translators available unto special needs children. Many state in Nigeria set up special schools to cater for the education of children with different disabilities and one of such is the Kwara State school for Special Needs.

Kwara State school for special needs is one among many schools in Kwara state that takes care of the educational needs of people living with disabilities. Kwara State Government has initiated a policy on inclusive education which made all public primary and secondary schools mandated to admit individuals living with disability. However, this policy has remained largely unimplemented as virtually all public primary and secondary schools in Kwara State are not inclusive of, and accessible to children with disabilities largely due to unavailability of special teachers and expertise to handle special students (Ademefun, n.d). On the other hand, Kwara State School for Special Needs, Oyun that was specifically established to handle special needs students with complements of expert special teachers, carers and assistive technology tools.

Children with special needs are educated in special schools (for example, a school for the visually impaired) or in an inclusive school where children with various special education needs and those without any are found depending on the nature of handicaps and availability of the school. They are educated by either a special education teacher or a regular teacher. Some of the advantages of special schools are that special schools are designed with the special needs children in mind, so they are adjudged better than inclusive schools particularly because they are assumed to have more materials (assistive technology tools) than the inclusive schools.

It is important that a special teacher or a special school is cognizant of how the students learn. Awareness of learning differences, especially learning disabilities, is critical so as to be able to decide on the appropriate assistive technology to integrate into teaching. While this is most true

in an educational environment, there are applications for all settings. Understanding the learning skill sets of others allows the teacher to communicate and teach more effectively. In particular, the Individuals with Disabilities Education Act (IDEA) (2004), listed the 13 categories of disabilities that a special needs school should be able to cater for.

The disabilities identified by IDEA are: Specific learning disability (Dyslexia, Dysgraphia and Dyscalculia); Attention-Deficit/Hyperactivity Disorder (ADHD); Autism spectrum disorder (ASD); Emotional disturbance; Visual impairment, including blindness; Speech or language impairment; Deafness and Hearing impairment; Orthopedic impairment; Deaf-blindness; Intellectual disability; Auditory processing disorder; Traumatic brain injury and; Visual perceptual/visual motor deficit. The Learning Disability Association of America (LDA) (2021) asserts that individuals with any disability could be made to reach full potentials when properly enrolled in an institution that would cater for their needs mentally, physically, academically, socially and in other areas. The association further opined that learning disabilities are lifelong challenge for the pupils and cannot be cured and with appropriate support and intervention, people with learning disabilities can achieve success in school, at work, in relationships, and in the community.

Students with learning or physical disabilities in primary and secondary special education programs often need one-on-one therapy sessions to work on improving their comprehension and practicing specific skills with a specially trained and certified teacher also known as Special Teachers. The students may also need specialized attention while in classes or outside classes while attempting to go through individualised instruction. Special teachers utilise assistive technology that suits each category of disability in order to facilitate instruction and enhance learning among special students.

There is no universally accepted definition for Assistive Technology. The World Health Organization, WHO (2020) considers assistive technology to be those products whose primary purpose is to maintain or improve an individual's functioning and independence to facilitate participation and to enhance overall well-being. The European Accessibility Act (EU, 2019) similarly defines assistive technology as any item, piece of equipment, service or product system including software that is used to increase, maintain, substitute or improve functional capabilities of persons with disabilities. With the help of these technologies, people who experience functional limitations are more able to live independently and participate in different aspects of life, including education, work, sports, leisure and culture (World Intellectual Property Organisation, 2021).

Assistive technology is an umbrella term, covering a broad range of technologies and products, ranging from relatively simple devices, such as a walking stick or reading glasses, to complicated, high-tech systems (Layton *et al.*, 2020). The broad term assistive technology is used to describe a variety of devices and services that help ensure that students with disabilities are included in a full range of social experiences and are able to function more independently, thus improving their quality of life. Examples of these devices include Hearing Aids, Cochlear implants, Visual alert system, Loop system, Accessible telephones, Videophones, Braille machine, wheel chair, electronic communication devices, pencil grip and computers to name a few.

Assistive technology devices can reduce barriers in the environment, enhance ability to communicate and also improve independence. It enhances the educational attainment of persons with disabilities which helps them gain employment and become contributors in the

development of the society instead of begging on the streets. This implies that without these devices, learning for children with special needs becomes a big problem. The utilization of these devices by students depends to a large extent on availability of the devices and gadgets in the schools and how teachers use them in their class to teach.

Closely related to this is the issue of the availability of assistive technology devices in schools and its provision. It is the responsibility of the government, whether federal, state or local according to the Federal Government of Nigeria(FRN, 2015) to provide infrastructure and learning materials (assistive technology devices inclusive) for children with disabilities to help them function well in school. Sadly, both Federal and State Governments in Nigeria had very vague or no information on the flow of funds for Special Education Needs related projects and programs (Oladele *et al.*, 2018). Hence, the Special Education Schools have been poorly funded and many Assistive Technology Tools could not be procured due to insufficient or paucity of funds.

Assistive Technology tools are key components of the special needs curriculum as it could be disability specific, therefore special teachers must demonstrate their awareness and capabilities for using different tools for instruction. From the invention of the crutch in ancient Egypt through the simple prosthetics of the Middle Ages to the latter-day Braille tablets, special education is now on the point of a future where autonomous wheelchairs, mind-controlled hearing aids and wearables are used to monitor health and emotion to lessen the impact of human limitations (WIPO, 2021).

The World Health Organisation (WHO) (2011) reported that more than one billion people in the world live with some form of disability, of whom nearly 200 million experience considerable difficulties in functioning. The report further ascertained that across the world, people with disabilities have poorer health outcomes, lower education achievements, less economic participation and higher rates of poverty than people without disabilities. This is partly because people with disabilities experience barriers in accessing services that others enjoy, including health, education, employment, and transport as well as information most especially in less advantaged communities like Kwara, Nigeria.

To achieve the long-lasting, better development prospects that were embedded in the 2015 Millennium Development Goals and beyond, people living with disabilities of various forms must be educated and empowered to remove the barriers which prevent them participating in their communities; finding decent work, and having their voices heard. Likewise, The United Nations Children's Fund (UNICEF) (2017) advocated non-discriminatory enrolment of individuals living with disabilities in special schools as a way of ensuring that emphasis given to equality and non-discrimination in international human rights instruments is reflected in the social model of disability.

Disability types in special needs schools could differ depending on the level of care, attention, resources (human and non-human) and availability assistive technology tools needed to cater for such individual. This factor could tempt administrators or special school owners to discriminately admits individuals with disability type that suits the resources and expertise of the school and leave out those that the school does not have resources to cater for. As such, this study investigated the types of disabilities among special students in school for special needs, Oyun, Kwara state and also the available assistive technology tools to cater for the needs of the students.

### **Research Questions**

1. What are the different types of disabilities being catered for at the Kwara state school for special needs?
2. What are the available assistive technologies for learning among special students in Kwara state school for special needs in Oyun?

### **Methodology**

The research design adopted for the study was a narrative qualitative research using interview to obtain needed information from the administrator of the school. One-to-one interview was conducted with the administrator of the special needs school, Oyun with researcher prepared Interview protocol adapted from the IDEA (2007) and Oladele *et al.* (2018). The Instrument contains two sections. Section A of the checklist itemizes different disability types with responses of Yes and No to indicate whether the school enrol such students. Section B of the Checklist contains list of assistive technology tools that fits under each category of disability.

Population of this study consist of all the special schools in Kwara State. School for Special Needs, OyunKwara State was purposively selected for this study as the school is the only special needs school that is in Ilorin township that fully caters for different types of disabilities among learners. The students in the school compound and the facilities in the school environment were observed before the researcher went in to the school administrator to conduct the interview. The Administrator of the institution was interviewed using the interview protocol and checklist and the responses were recorded and reported as obtained. The results of qualitative methods are more descriptive and the inferences can be drawn quite easily from the data that is obtained.

The use of qualitative study was necessary for the study as it allowed contextual inference to be drawn on the data obtained through the interview conducted at the school for special needs. Structured interview protocol generate qualitative data through the use of open-ended questions. This allows the respondent to talk in some depth, choosing their own words. This helps the researcher develop a real sense of a person's understanding of a situation. Patterns across the responses obtained was analysed using Thematic analysis which involves reading through a data set such as transcripts from in depth interviews carried out in this study and identifying patterns in meaning across the data.

## Results

**Research Question 1:** What are the different types of disabilities being catered for at the Kwara state school for special needs?

**Table 1: Disabilities being catered for at Kwara State school for special needs**

No	Checklist Items	Yes/No	Response
1	Deaf	Yes	Available
2	Blind	Yes	Available
3	Physical Disability	Yes	There are the students who couldn't use either of the hand or the legs
4	Learning Disability	Yes	There are those living with dyslexia and autism
5	Language Disorder	Yes	Available
6	Multiple Impairment	Yes	Most especially when the combining disability does not involve a mental disorder
7	Albinism	No	"They could be admitted if they have other disability like partial blindness"
8	Traumatic Brain Injury	No	"Such Individuals are referred to Psychiatric Hospitals for treatment"

Table 1 presents the response from the Principal at the school for special needs, Oyun, Kwara state as it concerns the different disability forms that the school caters for. The result on the table indicated that students living with disabilities such as deafness, blindness, physical disability, learning disability, and language disorder are being catered for in the school. It could also be inferred from the Table that only Albinos with other form of disability are considered for admission into the school and Individuals with traumatic brain injury are not admitted into the school.

**Research Question 2:** What are the available assistive technologies for learning among special students in Kwara state school for special needs in Oyun?

**Table 2: Status of assistive technologies**

No	Assistive Technologies	Response	Comments
1	Hearing Aids	Not Available	AT for the Deaf and Multiple disability
2	Cochlear implants	Not Available	AT for the Deaf and Multiple disability
3	Visual alert system	Available	AT for the Deaf and Multiple disability
4	Loop system	Not Available	AT for the Deaf and Multiple disability
5	Accessible telephones	Available	AT for the Deaf and Multiple disability
6	Videophones	Not Available	AT for the Deaf and Multiple disability
7	Large print books	Available	AT for the Blind, Visual impaired and Multiple disability
8	Typoscope	Not Available	AT for the Blind, Visual impaired and Multiple disability

9	Reading stand	Available	AT for the Blind, Visual impaired and Multiple disability
10	Low vision lamps	Available	AT for the Blind, Visual impaired and Multiple disability
11	Screen reader software	Available	AT for the Blind, Visual impaired and Multiple disability
12	Wheelchair	Available	AT for the Physically disabled and Multiple disability
13	Walker	Available	AT for the Physically disabled and Multiple disability
14	Crutches	Available	AT for the Physically disabled and Multiple disability
15	Prosthetic	Not Available	AT for the Physically disabled and Multiple disability
16	Electronic worksheet	Available	AT for the dyslexic and autists
17	Videotaped social skills	Available	AT for the dyslexic and autists
18	Variable speed recorders	Not Available	AT for the dyslexic and autists
19	Phonetic spelling software	Not Available	AT for the dyslexic and autists
20	Amplified telephones	Available	AT for the hearing impaired and auditory processing disorder
21	TV streamer	Available	AT for the hearing impaired and auditory processing disorder
22	Remote microphones	Available	AT for the hearing impaired and auditory processing disorder
23	Loop system	Not Available	AT for the hearing impaired and auditory processing disorder

Table 2 presents the Principal's response to questions that sought information on the available assistive technologies within the school. The result on the table indicated that visual alert system and accessible telephones are the available assistive technologies for deaf. Large print books, reading stand, Low vision lamps, and Screen reader software are the available assistive technologies for the blind. Crutches, walker, and wheelchair are the available assistive technologies for the physical disability. Videotaped social skills and electronic worksheet are the available assistive technologies for the learning disability, while remote microphones, TV streamer, and amplified telephones are the available assistive technologies for language disability. This implies that some assistive technologies are available for all the special students in the school.

The Table 2 also showed that certain Assistive Technologies needed that were not available in the school for Special Needs. The AT not available includes: Loop System (Language Disorder); Variable Speed Recorders and Phonetic Spelling software (Learning Disability); Prosthetic (Physical Disability); Typoscope (Blind) and; Hearing Aids, Cochlea Implants, loop Systems and Videophones (Deaf).

## Discussion

This study showed that the Kwara state school for Special Needs admits and offer educational services to students living with five different forms of disabilities which are the deaf, blind, physical disability, learning disability, and language disorder. The finding corroborates the report of Oladele *et al.* (2018), that reported that special schools in Nigeria mostly cater for the Visually impaired, hearing impaired and physically impaired. EduCeleb (2020), reported that most schools in the contemporary Nigerian settings now acknowledge the presence of some special students, and are being given the deserved attentions.

Eskay *et al.* (2012) noted that the issues of funding, absence or inadequate qualified teachers and absence of legal mandate on special education has contributed continued stagnancy of special education in Nigeria such that only few disabilities can be accommodated in the Special Needs schools. The Federal Government of Nigeria National Policy on Special Needs Education (FRN) (2015) further proclaimed the Nigerian school curriculum has limited or no space for Special Needs Education and institutions that offer the services are seen as offering secondary humanitarian services. Therefore it is important that the number of disabilities admitted into special needs schools be able to accommodate all ranges of disability that a pupil might have. Hence, this study recommends that adequate support be granted to special needs schools in terms of funding, legislation and curriculum planning to enable the enrolment of all the different forms of disabilities in the school.

This study also revealed that certain assistive technologies were available at the Kwara state school for Special Needs to cater the different forms of disabilities in the school in contrast to the study of Yusuf *et al.* (2017), that reported majority of the institutions not having required assistive technologies for students with disabilities. This contrast was seen in the study of Dominic *et al.* (2020) that revealed availability of AT in special needs schools in Northern Nigeria even though it was reported not to be sufficient to cater for the number of student. However, it could be implied that there has been a gradual funding of equipment purchase by Government for AT tools procurement.

### **Conclusion**

This study concluded that the assistive technology tools to cater for five different categories of disability in students are available at special needs school, Oyo Kwara state. The School for Special Needs would need to get new tools to be able to admit students with other forms of disability outside the ones they have already.

### **Recommendations**

Hence, the study recommends that the Kwara State Special needs school should strive to achieve the enrolment without discrimination that was decreed by IDEA and further echoed by Nigerian National Policy on Special Education. Also, adequate provision should be made by Government to make Assistive Technology tools available for various forms disability in Kwara school for special needs and administrators in the school should put available tools into maximal use by ensuring prompt and regular maintenance of the tools. Likewise, the Kwara school for special needs should consider publicity to increase the populace awareness of its existence and this would lead to higher patronage.

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