TEACHER PERCEPTION AND UTILIZATION OF ASSISTIVE TECHNOLOGY FOR EFFECTIVE TEACHING AND LEARNING AMONG DISABILITIES STUDENTS

FASINA Joke Elizabeth, ISHOLA Adebayo Monsur, ADEFUYE Adetayo Linus, and ADEYEMI Olalekan Timothy
Department of Educational Technology, College of Specialised and Professional Education, Tai Solarin Federal University of Education, Ijagun, Ogun State, Nigeria.

Abstract
The study examined teacher perception and utilization of assistive technology for effective teaching and learning among disabilities students. Two research questions and two hypotheses were answered and tested in this study. A descriptive research design of survey type was used. The population for this study comprised public senior secondary school teachers in Ijebu Ode local government, Ogun State. The sample size was 132 teachers and a purposive sampling technique was used in the selection process. A self- developed questionnaire titled: Teachers Perception, Utilization of Assistive Technology and Effective Teaching and Learning Questionnaire (TPUATETQQ) was used for data collection with 0.88 as a reliability coefficient. Frequency counts, percentage and bar-chart were used for presenting and analysing demographic characteristics of the respondents. Mean and standard deviation were used for analyzing research questions. Hypotheses were tested using Pearson Product Moment Correlation (PPMC). The findings of the study revealed that there was low level of teachers' perception on assistive technology for effective teaching and learning among disabilities students and that there were low level teachers utilize assistive technology for effective teaching and learning among disabilities students. It was also found that there was significant positive relationship between teacher perception on assistive technology and effective teaching/learning among disabilities students ($r = 0.517$, $p < .05$). ($r = 0.668$, $p < .05$) and there was significant relationship between teacher utilization of assistive technology and effective teaching/learning among disabilities students ($r = 0.668$, $p < .05$). It was recommended among others that both government and other stakeholders should organize workshop, seminars and other capacity building training regularly for teachers as means of updating their knowledge and skills in the use of assistive devices considering the dynamic nature of special education technology. Special Education teachers should be encouraged to deploy assistive technology for learning irrespective of their gender.

Keywords: Teacher Perception, Utilization, Assistive Technology, Effective Teaching-Learning, Disabilities Students

Introduction

Effective teaching is the knowledge, strategies, processes and behaviours which lead to good student outcomes. Effective teaching also entails developing students' belief systems, emotions, and attitudes. Effective teaching brings about effective learning. Effective learning refers to the process of acquiring and retaining knowledge or skills in an efficient and lasting way. It involves various strategies and approaches that optimize the learning experience. Effective learning also refers to the methods of teaching and learning that actively involve students in their own learning and personal development. Think of it as children learning how to learn, rather than simply parroting information or copying techniques from teachers or other children. Emeka and Dominic (2020) stated that teaching and learning of disability student is quite different from other students with stable health and that the actualization of teaching and learning effectiveness could be difficult to achieve. That is, the learning of students with special needs is concerned with where and how the curriculum is delivered or accessed. Thus, the provision for an appropriate education programme in the special environment has led to the development of a separate educational system which is designed to take care of the educational needs of individuals with special needs. The teaching and learning of students with special needs is one area of education that is attracting a universal concern and great pull of technologies towards its enhancement and efficiency. Special education technologies are those technologies that are provided to enhance functional capabilities and encourage students with special needs participation in education, thereby helping them to improve their academic achievement (An et al., 2019). Integrating emerging technologies into special education will not only offer help but increase the opportunities for students with special needs to meeting their educational aspirations. Students with disabilities include all persons who have long-time physical, mental, emotional, or sensory impairments, whose interaction with the different attitudinal and environmental barriers prevent them from full and or effective performance within the society on an equal basis with others. Physical disability is just a segment of individuals with disabilities. It has to do with abnormality or loss of function in a person's physical structure.

Physical disability brings a limitation on a person's physical fitness, functionality, mobility, and skills (World Health Organization, 2015). Physical disability whether partial or total loss of ability reduces the ability of the learner to learn freely. Visual impairment, speech impairment, hearing impairment, and mobility limitation are the most

common physical disabilities found in special needs schools in Nigeria (Adebisi, 2024). Students with physical disabilities usually experience difficulties with writing, reading, vision, reception of information and gripping objects like pen/pencil or moving arms or legs in full motion. It has become quite clear that these students cannot learn freely without the support of technology. United Nations International Children's Emergency Fund and World Health Organization joint report (UNICEF & WHO, 2015) acclaimed the need for the implementation of modern assistive technology to support them in their functional deficits and to assist them access instruction and thus learn better. Assistive technology (AT) is an umbrella term which is made up of assistive, adaptive, rehabilitative technologies and related services which are specifically made or adapted to serve as technical assistance for students and professionals with disabilities, students and professionals with disabilities, in this case, special education. Assistive technology involves the application of technologies that can assist in the teaching and learning process of students with special needs and they widely differ in quality and effectiveness. Assistive technology is used to provide individuals with disabilities educational opportunities while bringing out the cognitive potential in them, while some are used to enable the curricula and teachers to achieve their objectives, while the students are active participants in the learning process. Assistive technologies used in the education process of individuals with disabilities have been grouped to various ways in the special education literature. Nsofor and Bello (2023) grouped assistive technology into low types, medium technologies and high technologies. Low technologies (low-tech), are the common and inexpensive devices and tools purposively designed or adapted to assist in different areas of difficulties. They include simple pencil-grips, magnificent eyeglasses, and large-print cardholder, medium tech to mention but the few. Medium-tech assistive technology (mid-tech AT) consists of electronic or battery-operated devices that are more sophisticated than simple, non- manual tools but less complex, costly, and sophisticated than high-tech solutions. They often require a power source and some level of technical knowledge to operate, but are generally user-friendly and offer a balance between functionality and simplicity. High- tech assistive technologies are sophisticated electronic and computer-based devices that help individuals with disabilities perform tasks by using advanced features like artificial intelligence, complex software, and sophisticated hardware (Nsofor & Bello, 2023).

Special education teachers are faced with different challenges of attending to the diverse learning needs of students with physical disabilities in the classrooms. While some

of these students cannot read a print document, others experienced difficulty receiving spoken information. To others, communication is the greatest challenge they face while at the sometime, the movement to classrooms is the greatest challenge others face. Teachers' role in special education is consistent and significant to students' progress. Consequently, educationists have been working tirelessly to ensure that these students access learning in ways that take care of their learning differences. This involves the use of assistive technologies in planning instruction, classroom presentation and assessment. Furthermore, the potential of high-tech assistive technologies for students with special needs is likely to be found not in the technologies themselves but in the way these technologies are used by the teachers and students as teaching and learning tools. Onivehu et al. (2017), opined that the extent of use of assistive technologies in the classroom is determined by the perception of teachers. This will require both teachers and students to get familiar with assistive devices and software available in their schools which they can use to provide needed accommodation, substitution, modifications, adjustment, and adaptations that will help special needs students to access environment, curriculum, instruction, or assessment practices. Thus, the use of assistive technology within the special education ecosystem cannot be underestimated (Shikden, 2022). Perhaps, the likely reasons behind that dilemma may not be too far from the lack of consistency in use of assistive technology devices in the classroom and teachers' lack of training and experience on how best they can use technology in the classroom. Furthermore, many students with disabilities, teachers, and as well as their families have limited knowledge of assistive technologies which has made it difficult for them to identify and use these technologies for the benefit of the disabled students (Shikden, 2022). Lack of training has been considered leading to the underutilization and possible abandonment of assistive technology devices, especially among teachers and students with disabilities. Coleman (2022) reported that most teachers and other support staff do not receive adequate training on how to operate modern high-tech assistive technologies. Also identified as one of the major barriers to providing AT services in schools, is lack of funding. Allocation of sufficient funds for the educational sector and ICT development does not seem to be very attractive to the leaders in most developing countries like Nigeria. This can be seen from the budgetary allocations among the developing countries where greater allocations of the budget often go for rather than education (El-Rufai, 2021).

Statement of the Problem

Teaching students with disabilities presents numerous challenges, including limited resources, inadequate teacher training, and negative societal attitudes. Students may struggle with academic difficulties, lack appropriate support, and face discrimination. The emphasis of education today is that teaching and learning should be student-centred. However, this is almost impossible for students with special needs. How teachers teach and learners access curriculum is crucial for the attainment of these current educational demands. For students with physical disabilities, access to the curriculum will require the use of assistive technology. Research findings in the field of special education showed that despite the adoption of traditional technologies, many of the students with disabilities in developing countries like Nigeria are still experiencing barriers in learning, as they continue to learn under frustrating conditions. These include difficulties in reading, writing and reception of information. This causes drop out of many physically challenged students from school for the option of street begging; a phenomenon that is quite worrisome in Nigeria. Furthermore, the very few who manage to graduate from school certainly do so without necessary skills for survival and as such, they find it difficult to be absorbed by today's labour market. Additionally, the few that were lucky to be employed on condition of their status find it difficult to perform on the job because they weren't adequately trained using assistive technologies. While there is a need for high-tech AT resources there is also the need to undertake studies to see the development and use of high-tech assistive technology for teaching and learning of students in special education schools. Thus, it is this gap in research and development that prompted to examine teacher's perception and utilization of assistive technology for effective teaching and learning among disabilities students.

Objectives of the Study

The main objective of the study is to examine teacher perception and utilization of assistive technology for effective teaching and learning among disabilities students. Specifically, the study sought to:

1. find out the level of teacher perception on assistive technology for effective teaching and learning among disabilities students;
2. identify teacher utilization level of assistive technology for effective teaching and learning among disabilities students;

3. examine the relationship between teacher perception on assistive technology and effective teaching/learning among disabilities students;
4. examine the relationship between teacher utilization of assistive technology and effective teaching/learning among disabilities students.

Research Questions

The following research questions guided this study:

1. What is the level of teachers' perception on assistive technology for effective teaching and learning among disabilities students?
2. To what level do teachers utilize assistive technology for effective teaching and learning among disabilities students?

Hypotheses

The following null hypotheses were raised and tested in this study:

H_o1: There is no significant relationship between teacher perception on assistive technology and effective teaching/learning among disabilities students.

H_o2: There is no significant relationship between teacher utilization of assistive technology and effective teaching/learning among disabilities students.

Methodology

The study used descriptive research design of survey type. This design is considered very appropriate because the researchers intend to collect data from the selected respondents (teachers') to provide answer to the study objectives. The population for this study comprised public senior secondary school teachers in Ijebu Ode local government, Ogun State. However, a total of 13 public secondary schools were in Ijebu-Ode local government areas. Out of 13 public secondary schools in Ijebu-ode local government area, a purposive sampling technique was used in selecting 3 representing 23%. The schools selected are Adeola Odutola College, Ijebu-Muslim College and Anglican Girls Grammar school. From Adeola Odutola College 50 teachers out of 58 teachers were selected, from Ijebu-Muslim College 47 teachers were selected from 53 teachers and only 35 teachers selected from Anglican Girls Grammar school from 41 teachers using stratified sampling technique. Sample size was 132 teachers. The study uses Self-developed instrument titled; Teachers Perception, Utilization of Assistive Technology and Effective Teaching and Learning Questionnaire (TPUATETQ). The

questionnaire requests responses on a four (4) – point scale format which was a modification of 5-point Likert scale. The responses rating scales are as follows: Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). The questionnaire divided into two sections A and B. Section A focuses on demographic characteristics of the respondents, while section B also focuses on the teacher perception on assistive technology for effective teaching and learning and teacher utilization level of assistive technology for effective teaching and learning among disabilities students. The initial drafts of the instrument were subjected to face and contents validity by the experts from the department of Educational Technology. All the issues raised were duly attended to in order to ensure its content, construct, and criterion validity. To ensure the reliability of the instrument, a test-retest reliability of the instrument was carried out. The copies of the instrument were administered to a sample of 15 teachers in Ijebu-North Local government area, a separate school outside the geographical scope of the study. The purpose was to determine the stability and consistency of the instruments. Pearson Product Moment Correlation (PPMC) was used to determine the level of reliability coefficient which yielded 0.88. Data were collected using the validated instrument. The researchers administered the questionnaire to the respondents. Mean and standard deviation were used for analyzing research questions. Hypotheses were tested using Pearson Product Moment Correlation (PPMC).

Results

Research Question 1: What is the level of teachers' perception on assistive technology for effective teaching and learning among disabilities students?

Table 1: Descriptive statistics on the level of teachers' perception on assistive technology for effective teaching and learning among disabilities students

Items	Mean	SD
Assistive technology facilitates presentation of the subject matter	2.71	.903
Assistive technology improves students' academic performance.	2.69	.944
Assistive technology helps teachers to tailor instruction to the specific needs of students.	2.54	.899
Students with special needs function maximally in the classroom with the use of assistive technology.	2.58	.927
I am convinced that assistive technology plays an indispensable role in the teaching-learning process.	2.73	.977
I think a greater percentage of special education funds should be used to acquire assistive technologies	2.78	.804
I endeavour to improve my assistive technology competence for the benefit of students with special needs	2.66	.909
I am satisfied when I use assistive technology in the classroom.	2.83	.885
Assistive technologies can facilitate communication in the classroom.	2.92	.894
I believe assistive technology has an overall benefit for students with special needs.	2.67	.902
Cluster Mean	2.99	

Source: Field Survey, 2025

Table 1 revealed that cluster mean was reported as 2.99 and ranking mean was 2.92. This implied that there was low level of teachers' perception on assistive technology for effective teaching and learning among disabilities students.

Research Question 2: To what level do teachers utilize assistive technology for effective teaching and learning among disabilities students?

Table 2: Descriptive statistics on the level do teachers utilize assistive technology for effective teaching and learning among disabilities students

Items	Mean	SD
Use of assistive technology in special education assessment and planning.	3.04	.766
Use of assistive technology to facilitate instruction in special education programmes.	2.91	.905
Acquire a body of knowledge about the use of technology in special education.	2.68	.877
Evaluate technology hardwares and softwares and related materials for their potential use in special education programme.	2.80	.955
I used text-to-speech systems using Optical Character Recognition (OCR) in teaching disable students.	2.76	.832
Use assistive technology to generate teaching aids for special education classroom.	2.95	.822
Use assistive technology as aid to personnel productivity.	2.81	.856
Teach students to use trouble shooting techniques.	3.18	.754
Assemble, operate trouble shoot and maintain the components of technology system in special education environment.	2.77	.899
Teach various concepts related to the basic installation of assistive technology devices.	2.73	.988
Cluster Mean	2.86	

Source: Field Survey, 2025

Table 2 indicated that cluster mean was 2.86 and ranking mean of 3.18 was reported as highest. This implied that there was higher level of teachers utilize assistive technology for effective teaching and learning among disabilities students.

H_o1: There is no significant relationship between teacher perception on assistive technology and effective teaching/learning among disabilities students.

Table 3: Relationship between teacher perception on assistive technology and effective teaching/learning among disabilities students

Variables	Mean	SD	df	r-value	p-value
Effective teaching/learning among disabilities students	53.45	19.04	130	.517	.001
Teacher perception on assistive technology	21.93	8.772			

Source: Field Survey, 2025

Table 3, showed that there was significant relationship between the independent variable and the dependent variable in the order of ($r = 0.517$, $p < .05$). On this premise, null hypothesis was rejected and the researcher concluded that there was significant positive relationship between teacher perception on assistive technology and effective teaching/learning among disabilities students.

H_o2: There is no significant relationship between teacher utilization of assistive technology and effective teaching/learning among disabilities students.

Table 4: Relationship between teacher utilization of assistive technology and effective teaching/learning among disabilities students

Variables	Mean	SD	df	r-value	p-value
Effective teaching/learning among disabilities students	53.45	19.04	130	.668	.002
Teacher utilization of assistive technology	33.05	12.00			

Source: Field Survey, 2025

Table 4 showed that there was significant relationship between the independent variable and the dependent variable in the order of ($r = 0.668$, $p < .05$). On this premise, null hypothesis was rejected and the researcher concluded that there was significant relationship between teacher utilization of assistive technology and effective teaching/learning among disabilities students.

Discussion of Findings

Table 1 revealed that ranking mean was 2.92. This implied that there was low level of teachers' perception on assistive technology for effective teaching and learning among disabilities students. The findings of the study revealed that there was high level of teachers' perception on assistive technology as well as low level of teachers utilize assistive technology for effective teaching and learning among disabilities students. It was also found that there was significant positive relationship between teacher perception on assistive technology and effective teaching/learning among disabilities students and there was significant relationship between teacher utilization of assistive technology and effective teaching/learning among disabilities students. These findings were in consonant with Emeka and Dominic (2020) revealed that teachers do not use high-tech assistive devices regularly to teach students with physical disabilities. However, teachers perceived positively that there are great benefits to the use of these resources. Ogirima et al. (2017) findings revealed that teachers have a positive attitude towards the use of assistive technologies. However, teachers were not competent in the use of assistive technologies. Gender and teaching experience did not influence teachers' attitude and competence in the use of assistive technologies. Sunday et al. (2023) findings show that, assistive-technology device and teachers' attitude has impact on the school adjustment of students with visual impairment. Teachers' perception and assistive-technology device have a significant

positive effect on the school adjustment of students with visual impairment and the use of assistive-technology devices and teachers' attitude are important predictors of school adjustment among students with visual impairment.

Table 2 indicated that ranking mean 3.18 was reported as highest. This implied that there was higher level of teachers utilize assistive technology for effective teaching and learning among disabilities students. The findings of the study further correlate with Bakare et al. (2024) revealed that while basic assistive technologies like braille and screen readers were widely available and utilized, advanced tools such as speech-to- text software and video captioning devices were less accessible and infrequently used. Despite these limitations, participants conveyed positive perceptions of the effectiveness of assistive technologies, particularly regarding academic outcomes. The study also highlighted several challenges, including inadequate teacher training, insufficient funding, and a lack of technical support, which hindered the optimal utilization of these tools. Additionally, the findings underscored the positive impact of assistive technologies on academic performance and social integration, emphasizing their role in fostering greater independence and inclusion for deaf-blind students. Surajudeen et al. (2023) findings indicated that special education teachers are ready to use assistive technology for instruction and the teachers have high self-efficacy in the use of assistive technology for instruction. The study concluded that assistive technology can be used to facilitate teaching and stimulation if appropriately deployed. Isiaku and Nweke (2022) findings of the study revealed the need to select useful technology devices on effective teaching for students with learning disabilities, to enable them achieve the target goals, and instructional guides for special education teachers in the classroom, that would help students with learning disabilities benefit maximally from the use of assistive technology devices, whether in the classroom or at home. The findings of the study also revealed challenges faced by universities in the North West Region of Nigeria in using assistive. Silman et al. (2023) found that with the assistance of technology the participants of the study were quite motivated and could easily communicate with each other and also with people outside their organization. Yet, there was lack of technological devices such as automatic high-speed book scanner and imported books printed in Braille that could have improved the quality of life of the association members. Olugu (2023) result of the analysis revealed that a good number of assistive technology devices were not available for student with learning disabilities in Ohafia in Abia State. It was revealed that there was a significant relationship between teachers'

competence and utilization of assistive technology devices for improved teaching and learning of students with learning disabilities in Ohafia in Abia State. It was then concluded that there was unavailability and poor utilization of assistive technology devices for students with learning disabilities.

Furthermore, the findings of the study corroborate with Enitan and Ibiyinka (2022) results of this study revealed that assistive technology (AT) is capable of improving the teaching and learning of computer science for Students with special needs in an inclusive education if assistive technology (AT) is allowed to play its role. It was also discovered that both the teacher and students with special needs were exposed to very little assistive technology (AT) and there was no periodical training programme for both the teachers and the students with special needs on the use of assistive technology (AT) which has affected their teaching and learning ability.

Conclusion

The study examined teacher perception and utilization of assistive technology for effective teaching and learning among disabilities students and concluded that positive perception of teachers on could aid effective usage of assistive technology for instruction delivery among disabilities students.

Recommendations

Based on the findings of the study, the following recommendations are provided:

1. It was recommended among others that both government and other stakeholders should organize workshop, seminars and other capacity building training regularly for teachers as means of updating their knowledge and skills in the use of assistive devices considering the dynamic nature of special education technology.
2. It was recommended among other things that teachers should be trained and re-trained on the use of assistive technology for students with disabilities and behavioural disorders.
3. Special Education teachers should be encouraged to deploy assistive technology for learning irrespective of their gender.
4. Government, NGOs, parents, immediate community, rehabilitation centres and the school should partner with key stakeholders in education and make available assistive technology devices for improved teaching and learning of students with learning

disabilities.

5. A periodical training programme on the use of assistive technology (AT) be organized by all the stakeholders in inclusive education for both the students with special needs and all the teachers teaching them.

References

Abani, G. S. (2015). A survey of teachers' awareness and use of assistive technology in teaching children with special needs in north central Nigeria. A thesis in the department of special education and rehabilitation sciences, faculty of education, submitted to the school of postgraduate studies, university of Jos, in partial fulfilment of the requirements for the award of the degree of doctor of philosophy in special education (visual impairment) of the university of Jos.

Adebisi, R. O. (2024). Using information and communication technology in teaching children with special needs in 21st century. *JRSTME*: *Journal of Research in Science, Technology and Mathematics Education, 2*(1), 129-138.

Adebisi, R. O., Liman, N. A., & Longpoe, P. K. (2015). Using Assistive technology in teaching children with learning disabilities in the 21 Century. *Journal of Education and Practice, 2*(24), 14 – 20.

Adegbile, R. O. (2016). Effects of computer-assisted instructional package on pre-service teachers' classroom practices and secondary school: students learning outcomes in Christian religious knowledge. Unpublished Ph.D thesis, University of Ibadan.

Adegunju, K.A., Onivehu, A.O., Odetunde, A.O. & Oyeniran, A.O. (2017). Cognitive and Psychosocial Predictors of Academic Achievement among Pre-Service Teachers in University of Ilorin, Nigeria. *Asia Pacific Journal of Multidisciplinary Research, 5(3), 84-92.*

Adeleke, F.O., Onivehu A.O, Afe, T.T., & Ohawuiro, O.E. (2019). Availability of assistive technology in special needs schools in South-west, Nigeria. A paper presented at the 10th annual conference of Association of Sociologists of Education in Nigeria (ASEN).

Akinmusire, P. A. (2017). Critical reading and story-mapping instructional strategies as determinants of Nigeria certificate in Education teacher's classroom practices and achievement in English reading comprehension. Unpublished Ph.D thesis, University of Ibadan.

Akomolefe, C. O. (2014). Strategies and challenges of ICT: An infrastructural development for University education in Nigeria. Retrieved from: www.herpnet.org/revitalization of higher/chapter%2025pdf.

Alkahtani, K. A. F/ (2018). Teachers' knowledge and use of assistive technology for students with special educational needs. *Journal of Studies in Education, 3*(2), 65-86.

Amal, I. K., & Neama,Y. B. (2022). Special education teachers' knowledge and attitudes toward the use of assistive technology for disabled children management: Impact of an educational intervention. *Creative Education, 13*, 821-845.

An, F., Sharif, S., Wong, W. K., & Marriappan, M. (2019). Innovation of assistive technologies in special education: A review. IJERED: *International Journal of*

Enhanced Research in Educational Development, 2(3), 25-38. Retrieved from www.erpublications.com.

Areej, A. (2018). Perceptions of using assistive technology for students with disabilities in the classroom. I*nternational Journal of Special Education, 33*(1), 129-139.

Bakare, F. A., Rafiu, T. G., & Oyesiji (2024). The impact of assistive technologies on academic and social outcomes of deaf-blind students in Nigeria. *Acta Globalis Humanitatis et Linguarum, 1*(1), 138-157.

Balmeo, M.L., Nimo, E. A., Pagal, A., Puga, S. C., ArisDafQuino, Sanwen, J. L. (2019*).* Integrating technology in teaching students with special learning needs in the SPED schools in Baguio City. *The IAFOR Journal of Education*, *2*(2), 67-78.

Bruinsma, A.M. (2023). Implementation of assistive technology in the classroom. An unpublished Masters Project, St. John Fisher College.

Chiang, H. Y., & Liu, C. H. (2019). Evaluation of the benefits of assistive reading software: Perceptions of high school students with learning disabilities. *Assistive Technology*, *23*(4), 199-204.

Coleman, M. (2022). Successful implementation of assistive technology to promote access to curriculum and instruction for students with physical disabilities. *Journal of Assistive Technology and Physical Disabilities, 22*(3), 2-22.

Copley, J., & Ziviani, J. (2020). Barriers to the use of assistive technology for children with multiple disabilities. *Occupational Therapy International*, *11*(4), 229-243.

Edyburn), W. G. (2019). The use of technology in programs for students with visual impairments in Florida. *Journal of Visual Impairment and Blindness, 92,* 302-312.

El-Rufai, N. (2021). Why education can't wait? This Day Newspaper. Retrieved from http://www.thisdaylive.com/articles/why-education-cant-t-wait/95888/

Emeka, J. C., & Dominic, S. (2020). Teachers' perception and factors limiting the use of high-tech assistive technology in special education schools in North-West Nigeria. *Contemporary Educational Technology, 11*(1), 99-109.

Enitan, O. A., & Ibiyinka, T. A. (2022). Efficacy of assistive technology for improved teaching and learning in computer science. *Education and Management Engineering, 5*, 9-17.

Isiaku, W. B., & Nweke, P. O. (2022). Influence of assistive technology on effective teaching for students with learning disability in universities in north west region of Nigeria. *Journal of Educational Foundations, 9*(1), 126 -142.

Isiaku, W., & Nweke, B. (2022). Influence of assistive technology on effective teaching for students with learning disability in universities in north west region of Nigeria. *Journal of Educational Foundations, 9*(1), 126-142.

Khalil, A. I., & Hantira, N. Y. (2022). Special education teachers' knowledge and attitudes toward the use of assistive technology for disabled children management: impact of an *Educational Intervention. Creative Education, 13*, 821-845.

Lartz, M. N., Stoner, J. B. & Stout, L. (2021). Perspectives of assistive technology from deaf students at a hearing university. *Assistive Technology Outcomes and Benefits, 5*(1), 72-87.

Lee, H., & Templeton, R. (2018). Ensuring equal access to technology: Providing assistive technology for students with disabilities. *Theory into Practice*, *47*(3), 212–219.

Michaels, C. A., & McDermott, J. (2023). Assistive technology integration in special education teacher preparation: Program coordinators' perceptions of current attainment and importance. *Journal of Special Education Technology*, *18*(3), 29-44.

Nkwoagba, O. S. (2022). Independent living for persons with special needs through assistive technology.

Nsofor, C. C., & Bello, A. (2023). *Emerging trends in educational technology*. Ibadan: Emmi Pres.

Ogirima, O. A., Emilia, O. O., & Oyeniran, B. J. (2017). Teachers' attitude and competence in the use of assistive technologies in special needs schools. *Acta Didactica Napocensia, 10*(4), 21-32.

Okolie, U. C. (2018). Management of woodwork workshop in tertiary institutions in Nigeria: An analytical study. *Malaysian Online Journal of Education, 2*(1), 20- 36.

Okolocha, C. C., & Onyeneke, E. N. (2017). Secondary school principals' perception of business studies teachers' teaching effectiveness in Anambra State, Nigeria. *Journal of Education and Practice, 4*(2), 171-182.

Okoye, K. R. E., & Kingsley, A. N. (2018). Strategies considered effective by business educaors for quality assurance in business education program in universities in South-South, Nigeria. *European Journal of Business and Management, 10*(2), 43-48.

Olugu, F. F. (2023). Availability and utilization of assistive technology devices for improved teaching and learning among students with learning disabilities in Ohafia Abia state. *Journal of Education Sciences, 23*(2), 123-134.

Omoifo, C. N., & Urevbu, A. O. (2015). An overview of teaching and learning. A paper presented at working on pedagogy for junior and intermediate lecturers in University of Benin organized by centre for Gender studies.

Onivehu, A. O., Ohawuiro O. E., & Oyeniran B. J. (2017). Teachers' attitude and competence in the use of assistive technologies in special needs schools. *Acts*

Didactica Napocensia, 10(4), 21-32. https://doi.org/10.24193/adn.10.4.3

Onivehu, O. A., Ohawuiro, O. E., & Oyeniran, B. J. (2017). Teachers' attitude and competence in the use of assistive technologies in special needs schools. *Acta Didactica Napocensia, 11*(4), 20-32.

Oyekan, S. O. (2016). Foundations of Teacher Education. Okitipupa: Ebun-Oluwa Press Starr, L. (2002). Measuring the effects of effective teaching. Education World. from: www.education-world.com/a_issues.shtml.

Parette, H. P., & Stoner, J. B. (2108). Benefits of assistive technology user groups for early childhood education professionals. *Early Childhood Education Journal*, *35*(4), 313- 319.

Parish, A. (2017). Assistive Technology to support students with special needs. Center for Innovation and Leadership in Special Education.

Shikden, A. G. (2022). *A survey of teachers' awareness and use of assistive technology in teaching children with special needs in north central Nigeria* (Unpublished Thesis), Department of special education and rehabilitation sciences, Faculty of Education, University of Jos, Plateau State, Nigeria.

Silman, F., Yaratan, H., & Karanfiller, T., (2023). Use of assistive technology for teaching-learning and administrative processes for the visually impaired people. *EURASIA Journal of Mathematics Science and Technology Education, 3*(8), 4805-4813.

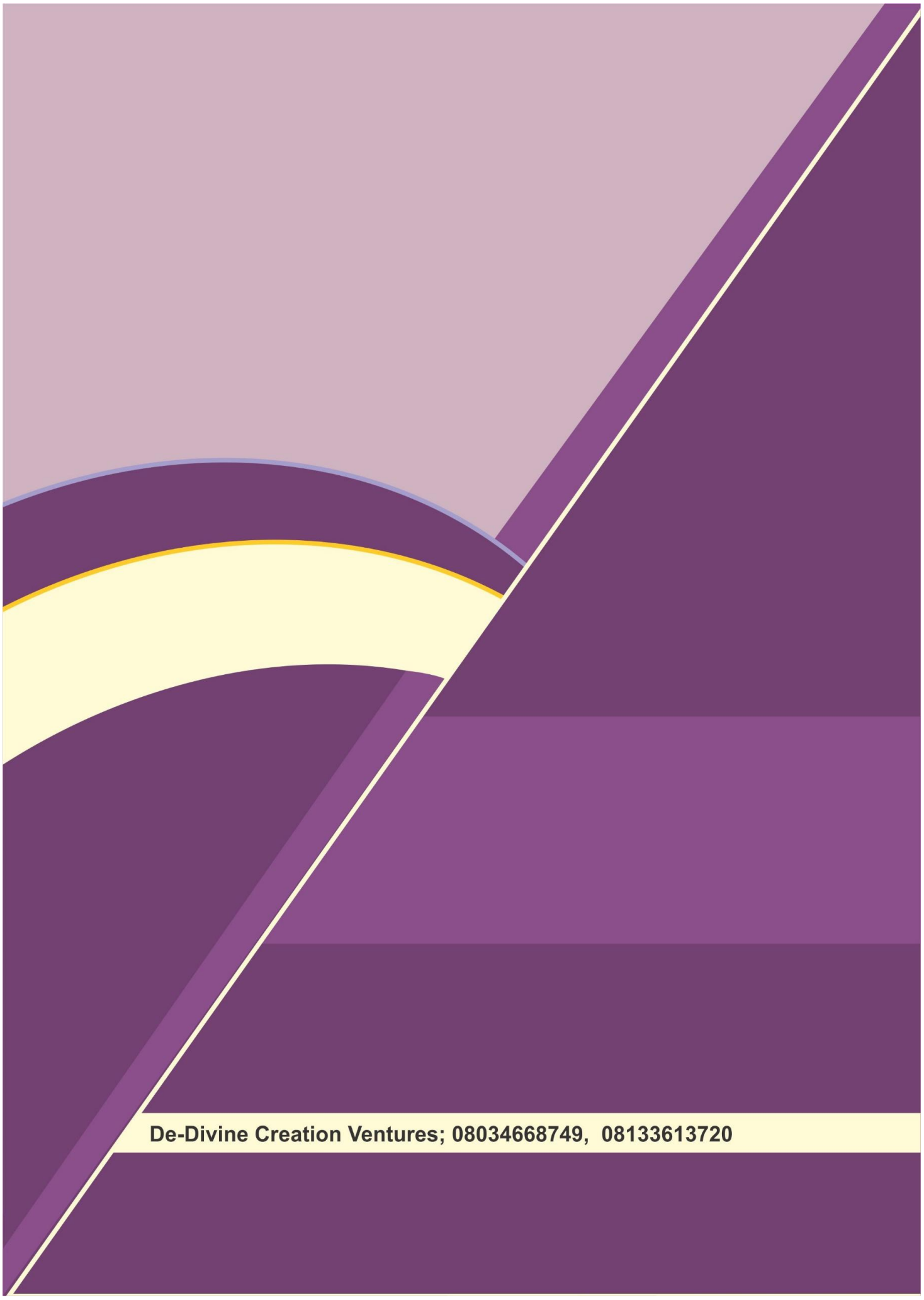
Sunday, A B., & Assami, E. M. (2021). Assistive technology devices and teachers' attitude as correlates of school adjustment of secondary school students with visual impairment in Oyo state, Nigeria. *Sapientia Foundation Journal of Education, Sciences and Gender Studies (SFJESGS), 5*(4), 209-221

Sunday, A. A., Akeem, A. L., & Assam, A. M. (2023). Assistive technology devices and teachers' attitude as correlates of school adjustment of secondary school students with visual impairment in Oyo state, Nigeria. *Sapientia Foundation Journal of Education, Sciences and Gender Studies (SFJESGS), 5*(4), 209-221.

Surajudeen, T. B., Ibironke E. S., & Aladesusi, (2023). Special education teachers' readiness and self-efficacy in utilization of assistive technologies for instruction in secondary school. *Indonesian Journal of Community and Special Needs Education, 3*(1), 33-42.

UNICEF & WHO (2015). *Assistive technology for children with disabilities: Creating opportunities for education, inclusion and participation*. A discussion paper. Retrieved from http://www.unesdoc.unesco.org/disabilities

Winter, E. & O'Raw, P. (2020*).* Literature review of the principles and practices relating to inclusive education for children with special educational needs. National Council for Special Education. Trim, Northern Ireland.


De-Divine Creation Ventures; 08034668749, 08133613720