

 Research Article

Level of Preparedness of Teachers and Pupils in the Era of Technology: A Descriptive Survey

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Abstract

The purpose of the study was to investigate the level of preparedness of teachers and pupils in the era of technology: A descriptive survey research design. The population consisted of all the lower basic schools' pupils and teachers in two Local Government Areas, Bayelsa State. Twenty-one (21) schools were randomly and purposively selected for the study. A sample size of 100 basic school teachers was drawn from 23 lower basic schools. A 28-item questionnaire titled, "Level of Preparedness of Teachers and Pupils for the Era of Technology" was used as an instrument for data collection for the study. One research question (What is the level of preparedness of teachers and pupils in the present era of technology?) guided the study. A reliability index of 0.9 was obtained using Cronbach's alpha computation. The data collected were analyzed using tables, mean, variance, and standard deviation. Findings revealed that technological gadgets that would set the stage rolling for action are not on the ground. Teachers are ready for the integration of technology in the teaching and learning process, but are handicapped due to financial incapacity to meet the needs for quality delivery. Also, most especially, pupils are not prepared for this move due to hunger and the economic incapacitation of their parents. This implied that Nigeria is yet to be ready for the movement of education for the 21st century. Recommendations made include that the government should be committed to addressing the economic state of the nation, boost funding of education, and review the curriculum to suit the requirements of skills and attitude for the 21st century.

Keywords: Education, Emerging Trend, Lower Basic Schools, Pupils, Teachers, Technology

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1. INTRODUCTION

Education has received many definitions from diverse scholars of different ages. National Policy on Education (2014) defined education as a means of developing potential and capable resource persons. It is a handy tool for the empowerment of all groups of people. It went further to say that education is the development of a capable workforce through the acquisition of relevant, functional, and practical skills for life, capable of producing a society that is relevant in the 21st century. Education is a fundamental helm through which all groups of individuals, including children, can learn skills, attitudes, morals, and values to fit in properly in society (Uzundu, 2021). Over the years, the education system of Nigeria has not been able to solve prevailing issues of its citizens because it has not been inclusive, lacks the capacity to produce skillful, employable graduates, gives no room for equal opportunity for all, and is also alien to the peculiarities of Nigerians (Eya & Eya, 2022; Dike, 2024). Nigeria's education has been characterized by incessant strikes and strike notices by all levels of academic and non-academic associations due to failed promises by the government. Budget allocation for education is still very low over the decades now and has never met the UNESCO benchmark of 26% for education, according to Badmus and Omosewo (as cited in Cleopas, 2022). Nigeria is yet to be interested in the education of its children, an education that prepares the child for life. The athletes, politicians, and others earn better than teachers and lecturers, while in many developed nations like the USA, Japan, Germany, Canada, the UK, among others, teachers and lecturers are very high on the ladder of payment, and education of their children is free at all levels. Imagine Nigerians

running to Ghana, the Benin Republic, Togo, among others, for secondary and tertiary education. This highlights further the decadence in our educational system. The education of the developed nations has less emphasis on paper qualifications, rather on relevant and practical skills, knowledge, attitude, and values that are functional to the betterment and well-being of their nations. The aftermath of developed nations' education has developed children's skills, attitude, and knowledge to produce games, phones, and simple technology accessories, among others. Anagbogu (2022) opined that education that lacks value and skills, no matter how good it looks, will end up making a learner a clever devil. Education should inculcate skills, attitude, knowledge, morals, values, and be more inclusive, giving room for all to partake. Quality education is one of the goals of Sustainable Development Goals in 2030 to address global issues such as inequalities, poverty, climate change, peace and justice, and environmental degradation (United Nations, 2021). Gambari (2021) reported that teaching approaches, learning approaches, content development, structure, learning environment, technological devices, and assessment process have changed with time. Gambari in Eya and Eya (2022) report that the 21st century teaching and learning process is a shift from old-style classrooms to virtual and online classes, from individualized learning to collaborative learning, from content-based to result-oriented, from pen on paper to computer-based tests, teacher teacher-centered to child-centered, from old-style environment to digital environment, and from lecture notes to mobile devices such as tablets. It is sad to note that Nigeria is backward and has lost ground in the industrial revolutionary trend of the age, hence, gradually bringing in these shifts but at a very slow rate into the system (Cleopas, 2023).

Teacher quality is crucial in the enhancement of learning outcomes in the present age. The place of teachers in the sustainable and economic growth of any nation cannot be relegated to the background, as no nation can rise higher than its educational system, in which teachers are fundamental. The teachers are implementers of any government policy on education as they are in classrooms with learners and have first-hand experience/information on teaching and learning challenges. The teacher is one who has mastery of his / her subject matter, uses a variety of teaching methods and instructional materials. The teacher instructs and guides learners in the path of construction and acquisition of knowledge, skills, attitude, values, and morals, which bring about a change in behaviour. If teachers should perform optimally, they should be held in the highest regard in terms of respect, remuneration, training and retraining, welfare packages, among others. Evidence in research reported that Artificial Intelligence (AI), with all its benefits, cannot replace the role of teachers in the teaching and learning process (Cleopas, 2023). It is worth of note to understand that technology cannot replace the place of teachers in the teaching and learning process, and its aftermath is anchored on many other factors (Outhwaite et al, 2023).

The place of children in the advancement of any nation is very sacred to the overall development of that nation (Eya and Eya, 2022). They become the most viable part of the population over time to determine peace, prosperity, and survival of that nation. Invariably, the height of chaos, unrest, crisis, and instability of any nation depends on what has been fed to the children over the years. The majority of the young people masterminding criminal activities such as kidnapping, assassination, theft, killings, terrorism, thuggery, among others in the country were once children with little or no education, no food, no skills, no attitude, no character, disadvantaged, marginalized, among others. This is confirmed by Chikoko & Mthembu (2021) in their work titled, the impact of poverty on basic education in South Africa: A systematic review of literature. Statistics hold that Nigeria has the largest drop out of school children, totaling 13.4 million children (Eya and Eya, 2022). Nigeria's population has a higher percentage of young people less than 25 years (Anyanwu 2014; Odoh & Emeh, 2014). 172 million young persons are unemployed, underemployed, and idle International Labour Organization (ILO, 2019). The challenge facing us today is a result of inadequate, non-functional, not practical, and irrelevant education over the years, despite plans to key into one of the priorities of UNESCO and MDGs on "Education for all" which is free, universal, and compulsory for every child within the school age. Nigeria would have gone beyond the present level of development in all areas, including education, if it had been followed before the outbreak of the COVID-19 pandemic that shut out many programs of the world, including education, and exposed Africa and Nigeria in particular to its backwardness in science and technology. The aftermath further expanded the existing wide gap of flaws of inadequacies in education, and this gap has continued to widen more due to prevailing concerns in the economy, security, and crisis, among others. Africa struggled for months to put measures in place for tertiary education students to learn, but the secondary and primary school learners were completely cut off throughout the period of the COVID-19 pandemic. There was no hope for them to be educated. What a shutout in the 21st century? What a shutout to the digital native of the century? Early childhood and primary school ages are crucial stages to ensure a solid foundation in numeracy and

literacy skills. Nigerian children need education integrated with current innovative technologies, with skills, values, attitude, and morals. Despite Nigeria's robust National Policy on Education (FRN, 2013), the lack of implementation of some parts of it has done us no good. For instance, specific incentives and provisions shall be made for science education at primary, secondary and tertiary levels of the education, every child shall be taught in the mother tongue of the immediate community for the first four years of primary education, educational events shall be learner centered for maximum development, fulfillment and it shall be practical, hands-on, experimental and IT based, have not been detailed implemented in schools. In addition, the inability to meet the UNESCO benchmark of funding of education over the years has been traumatic to development, according to Badmus and Omosewo (as cited in Cleopas, 2022). Poor salary structure for teachers and incessant industrial actions by the education community are not left out. Furthermore, recent happenings of insecurity, crisis, conflict, community clashes, destruction of lives and property, hate, wars, herders and farmers clashes, kidnapping, assassins, political upheaval, poverty, disease, Boko Haram, among others, have progressively drained Nigeria (Cleopas, 2019; Uzundu, 2021). Amidst all these challenges in Nigeria, poverty has become a household name in most families today. The United Nations Children Education Fund (UNICEF, 2011; UNESCO, 2017; United Nations, 2021) reports that millions of children across the world are hungry. UNESCO (2017) reports that over 50% of the world's population of children and adolescents are not learning. Perhaps this is due to hunger first among other factors. One of the past administrations in Nigeria spent millions to feed children in basic education in the northern part, excluding children in the southern, eastern, and western parts. Could it be that these exempted children were not hungry? If the majority of children are hungry, how prepared are we for the 21st century education that should include basic education level? Obviously, indications show that deliberate, conscious, and pragmatic efforts have to be made to remedy the ailing situation in the country in order to fix issues that are anti-thriving in the 21st century. We crave for a relevant, practical, and functional education that will produce knowledgeable thinkers, reflective, problem solvers, technocrats, scientists, among others, for national development and sustainability. The study focused on the investigation of the level of preparedness of teachers and pupils in the era of technology: A descriptive survey research design.

1.1. Literature Review

Egede and Asabor (2019) investigated integration of technology in the training of education teachers in Nigeria: Issues, challenges, and prospects. A proceeding of ADECT 2019, Chapter 35. Findings revealed that the integration of technology in schools is still very low. Inability of technical know-how and unavailability of gadgets for teachers are some of the challenges encountered in schools. Recommendations made include that government and non-governmental bodies should intervene by providing resources to facilitate the proper integration of technology in our schools.

Chikoko and Mthembu (2021) investigated the impact of poverty on basic education in South Africa: A systematic review of literature. A descriptive survey research design was adopted for the study. Secondary data were sourced from different literature. An inductive content analysis approach was used for data analysis. The findings revealed that poverty was an enemy that militated against the development of the country. It was recommended that drastic measures should be put in place to reduce poverty, and the nation must endeavour to shift from a deficit to a credit-based based in order to overcome challenges of the age.

Brzezinski (2022) examined the effect of poverty on the quality of education. Findings revealed that most of the academic concerns children faced are linked to poverty, and there is a connectivity between the socio-economic status of children and the choice and quality of education children can afford. This implied that poverty must be dealt with to make a headway in the quality education of the people.

Kalogiannidis et al. (2023) investigate the impact of technology integration on teaching and learning in the primary school classroom on economic growth. The study adopted a descriptive survey research design. Two hundred (200) teachers from 10 public primary schools in Kozani, Greece, were randomly selected for the study. Findings revealed that the usage of technology in their classroom to improve teaching and learning is poor due to many constraints, such as a lack of preparation, technical competence, and the right attitude to teaching and learning. The study pointed out that technology skills could help in economic transformation, such as the creation of jobs and problem-solving. It is recommended that it is crucial to

promote technological tools in education at the primary level to contribute meaningfully to sustainable economic growth and development nationally and globally.

Mpuangnan (2024) investigated teacher preparedness and professional development needs for successful technology integration in teacher education. A mixed-method approach was employed for the study. Stratified and purposive sampling techniques were employed to select 485 respondents (469 tutors & 16 principals) for the study. Quantitative data and qualitative data were used for data collection. The instruments used for data collection were structured questionnaires and semi-structured interview schedules. Data collected were analyzed using descriptive, inferential statistics, and inductive analysis. The findings showed that age, gender, higher qualifications, and professional experience influenced technology integration, and infrastructural issues and resistance to change are militating against the successful integration of technology. Recommendations include that the Ministry of Education should provide a platform for training and retraining of teachers for knowledge and skill acquisition to use modern technologies in teaching and learning.

Pappa et al. (2024) investigated technology education in primary schools: addressing teachers' perceptions, perceived barriers, and needs. Primary school pupils and teachers have been neglected over the years as regards adequate basics in education, and now emerging trends in the 21st century. Poor curricula frameworks in technology education, lack of confidence due to poor skills and attitude in digital skills, and complicated terminologies in technology education are gaps issues identified in the literature. Semi-structured interviews were used for data collection, and the statistical tool for data analysis was content analysis. Lack of collaboration locally and internationally with pupils, teachers, and schools, content knowledge, professional development programs, clearly stated curricula standards, and proper training have been identified as factors militating against integration of technology education.

Uzodinma et al. (2024) assessed the impact of technology integration in enhancing learning outcomes on childhood and primary education in Nigeria: A case study of hill crest preparatory and primary school, Nsukka. The study employed a descriptive survey research design. 225 caregivers at Hill Crest Preparatory and Primary School, Nsukka, Enugu State, Nigeria served as the population for the study. A structured questionnaire developed by the researchers titled: Technology Integration in Enhancing Learning Outcomes on Childhood and Primary Education was used for data collection. Cronbach's alpha reliability coefficient was used to determine the instruments that yielded reliability coefficients of 0.84. The findings revealed a significant correlation between technology integration and achievement of pupils in childhood and identified gaps in the level of technology integration across schools. Based on these findings, education communities should prioritize the integration of technology in curriculum development and capacity-building programs for teachers.

1.2. Theoretical Framework

1.2.1. Piaget's Theory of Cognitive Development (1963)

This theory believes that children move from one stage of cognitive development to another at different ages. It is divided into four stages, which are the sensorimotor stage, pre-operational stage, concrete operational stage, and formal operational stage. The study focuses on the concrete operational stage because it is within the basic education ages. It is the middle childhood stage that begins at six and ends at eleven. The child is full of activities like learning by doing, hands-on activities, and playing games with peers. He/she prefers concrete objects, is more sociable, and competitive. This is the period of discovery or pathfinding. The child is able to learn the operation of subtraction, addition, and multiplication of numbers that involve logical thinking, classification of objects, events, and relationships. They have the capacity to solve problems that involve weight, area, mass, numbers, and quantity. This theory supports this study in that the middle childhood stage is a result-oriented stage on which a solid foundation of numeracy and literacy is built, because, naturally, they are ready for hands-on activities. It is a stage of curiosity and pathfinding which will help children construct knowledge, take ownership and responsibility of their learning, and become problem solvers, critical thinkers, and innovators for sustainable and economic development.

1.3. Statement of the Problem

Basic education occupies a niche in the foundation of child development. It is a crucial stage of development that should be given attention due to its ripple effects on adolescence and adulthood. Despite a series of reforms and reviews in education, much attention has not been given to basic education with regard to a conducive environment, infrastructure, teachers' welfare, funding, innovative technology, among others, in order to enhance quality education as stated in the National Policy on Education (FRN, 2013). It is important to note that the number of children outside the classroom is more than the number of children in the classrooms. A good number of these children are seen at home with their parents during school hours, on the street hawking, in the marketplaces with their parents, and on the streets doing one thing or another instead of being in the classrooms. According to UNESCO (2017), more than half of the child and adolescent population are not learning worldwide. Also, UNICEF (as cited in Cleopas, 2023), 10 million children are outside the classroom and they are on the street doing petty jobs or hawking due to poverty in Nigeria. Having stated in the National Policy on Education (FRN, 2013) that education is the right of every child, equal rights should be given to every child of school age, and education for all, one begins to wonder when these will be fully realized. The plan of the Universal Basic Education Commission in President Obasanjo's administration is to educate all Nigerians and achieve the Millennium Development Goals (MDGs), but considering the current situation in Nigeria, it is obvious that we did not achieve the MDGs (Cleopas, 2018). Africa has witnessed the Millennium Development Goals (MDGs) and now the Sustainable Development Goals (SDGs), which are set to be achieved by 2030. What will be the lot of Africa and Nigeria in particular, with all its attendant issues in the teaching and learning process, if we fail to key into this movement by preparing adequately, consciously, deliberately, and practically implementing this technology in our schools in order to survive in the 21st century with all its emerging challenges? Literatures abound on secondary and tertiary education as regard integrating technology in 21st century, but little or no literature is available on basic education, hence, the literature gap of the study. Little or no literature is available on the preparedness of basic education teachers and pupils for the 21st century education, hence, the contextual and population gaps of the study. No wonder the UNESCO report of half of the world's population of children are not learning in this century. The researcher sought to delve into the why of the children not learning, which could be a result of a lack of preparation for the novelty of the age. There is also a knowledge gap in this study as it relates to the feeding of northern children, excluding western, eastern, and southern children at the basic education level. Also, in this digital shift age, use of technologies cannot be relegated to the background (Chacaltan et al, 2024). It is on this background that the study set out to investigate the level of preparedness of teachers and pupils in the present era of technology in Bayelsa State: A descriptive survey research design.

1.4. Purpose of the Study

The purpose of the study is to investigate the level of preparedness of teachers and pupils in the present era of technology in Bayelsa State: A descriptive survey research design.

1.5. Research Question

What is the level of preparedness of teachers and pupils in the present era of technology?

2. METHOD

2.1. Research Design

A descriptive survey research design was adopted for the study. The choice of research design was made because the study focused on getting data from a specific group of respondents through the use of a questionnaire to answer the research question. A quantitative research method was employed as the study quantified data collected through a questionnaire. The population was all the lower basic schools and their teachers in two Local Government Areas in Bayelsa State. The two Local Government Areas have one hundred and thirty-three (133) basic schools and one thousand two hundred and thirty-seven (1,237) lower basic schools' teachers. A purposive random sampling technique was used in the study. This is a form of

non-probability sampling that enables the researcher to select the respondents based on certain characteristics. This was because samples were selected on purpose based on certain characteristics. 21 schools were randomly and purposively selected in the two Local Government Areas as sampled schools.

2.2. Participants

The sample size was one hundred (100) teachers randomly selected from 21 basic schools from the two Local Government Areas. The ratio of the teachers was male 20% and female 80%. The choice of the schools was based on the school having experienced teachers who had teaching qualifications, willing to contribute to the study, and must be public lower basic schools. The sample size was based on the availability of teachers at work, with teaching qualifications such as Nigeria Certificate in Education (NCE), Bachelor in Science (Education) (B.Sc(E)), Bachelor in Education (B.Ed), Post Graduate Degree in Education (PGDE), and Master in Education (M.Ed) in the lower basic schools. The choice of the locale was based on the convenience of the road network, which is motorable.

2.3. Instrument

The research instrument used for data collection was a self-developed 28-item structured questionnaire titled, "Questionnaire on Level of Preparedness of Teachers and Pupils in the Present Era of Technology: A Descriptive Survey Research Design". It was given to two experts in the department of science education for validation, after which the corrections made were incorporated into the final draft. The researcher personally visited the public lower basic schools in the two Local Government Areas to administer the questionnaire titled, "Questionnaire on Level of Preparedness of Teachers and Pupils in the Present Era of Technology: A Descriptive Survey Research Design", to the teachers. The teachers responded to the items in the questionnaire and gave them back to the researcher. Cronbach's alpha was used to determine the reliability index coefficient of 0.9 on the level of teachers and pupils' preparedness in the present era of technology, using a pilot study on 20 respondents from 2 lower basic schools outside the study respondents and schools.

2.4. Data Analysis

Tables, mean, variance, and standard deviation were used for data analysis of research questions, and the mean scores of 2.50 and above were seen as accepted, while mean scores below 2.50 were seen as rejected. The weighted mean scores are as follows: SA = 4 points, A = 3 points, D = 2 points, and SD = 1 point.

3. RESULTS

The results of the current study are presented in Table 1.

Table 1. Summary of Mean Scores, Variance, Standard Deviation, and Remarks of Level of Teachers and Pupils' Preparedness in the Era of Technology

S/N	Items	Mean	Variance	Standard Deviation	Remark
Level of teachers' and pupils' preparedness in the era of technology					
1	I have a functional and reliable Android phone	2.9	1.8	1.3	Accepted
2	I have a reliable and functional laptop for use	2.1	1.8	1.3	Rejected
3	I can use my laptop for basic operations	2.3	1.7	1.3	Rejected
4	I can operate my laptop for teaching and learning purposes	2.4	1.6	1.2	Rejected
5	I can use my phone for teaching and learning purposes	2.7	1.7	1.3	Accepted
6	My school has an ICT facility for teachers and pupils	1.9	2.1	1.4	Rejected
7	I use white whiteboard and a marker to teach pupils	2.9	1.8	1.3	Accepted
8	I use my laptop to teach pupils	2.0	2.0	1.4	Rejected
9	My school has projectors for use in classrooms	1.8	2.3	1.5	Rejected

S/N	Items	Mean	Variance	Standard Deviation	Remark
10	I can make research online to complement my textbooks	2.6	1.6	1.2	Accepted
11	There is constant electricity in the school during working hours	1.8	2.3	1.5	Rejected
12	The school has a standby generator to power the classrooms	1.7	2.5	1.5	Rejected
13	The school has enough chairs and desks in the classrooms for pupils	2.4	1.6	1.2	Rejected
14	The school is connected to a power source	2.1	1.8	1.3	Rejected
15	Workshops and seminars are organized regularly for teachers	2.7	1.7	1.3	Accepted
16	I pay for and attend conferences regularly	2.2	1.7	1.3	Rejected
17	My school has an internet connection for use	1.9	2.1	1.4	Rejected
18	I want to learn how to operate a laptop to teach	2.9	1.8	1.3	Accepted
19	I cannot afford to buy a laptop	2.8	1.7	1.3	Accepted
20	Most pupils come to school without food	2.9	1.8	1.3	Accepted
21	Pupils come to school hungry	2.9	1.8	1.3	Accepted
22	Uniforms of pupils are always dirty and torn	2.7	1.7	1.3	Accepted
23	Pupils are from a poor background	2.9	1.8	1.3	Accepted
24	Pupils are from wealthy homes	2.4	1.6	1.2	Rejected
25	Pupils have educated parents	2.7	1.7	1.3	Accepted
26	Pupils do not have textbooks and writing materials	2.7	1.7	1.3	Accepted
27	Pupils are absent from school regularly	2.6	1.6	1.2	Accepted
28	Pupils come to school late	2.8	1.7	1.3	Accepted

Note: The weighted mean scores are as follows: SA = 4 points, A = 3 points, D = 2 points, and SD = 1 point.

The mean scores of 2.50 and above were marked as accepted, while mean scores below 2.50 were marked as rejected. Data gathered from mean analysis in Table 1 implied that items 1, 5, 7, 10, 15, 18, 19, 20, 21, 22, 23, 25, 26, 27 and 28 were accepted because they were above 2.5 criterion mean value while items 2, 3, 4, 6, 8, 9, 11, 12, 13, 14, 16, 17 and 24 were rejected because they were below 2.5 criterion mean value. Items 1, 2, 3, 4, 5, 6, 7, 8, 10, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27 and 28 are less disperse from the standard point of mean, while items 9, 11 and 12 are more dispersed from the standard point of mean.

4. DISCUSSION

The emergence of the COVID-19 pandemic came with many challenges, and the world today is struggling to adjust to its new normal. One of these emerging challenges is the integration of technology in teaching and learning in the 21st century. The study revealed that basic education teachers have functional and reliable Android phones that can be used for teaching and learning. The teachers are knowledgeable enough to research online to complement their textbooks, and workshops and seminars are organized regularly for teachers to keep them informed of current happenings in education around the globe. These conform with the studies of Uzundu (2021) and Gambari (2021). The majority of teachers are yet to know how to operate laptops for purposes of teaching and learning. The use of phones is not adequate to teach pupils as this cannot cater for a good number of pupils' needs, as it could be so exhausting, time-consuming, energy sapping, and would produce little result. It is also sad to note that a good number of basic education teachers cannot afford to buy laptops. This perhaps is due to poor remuneration of teachers and high poverty level, which has gulped a high percentage of people in the country. This is in support of Cleopas (2023) in the work titled, "Peace education at the basic education level: a panacea for national development". Despite gallant strides made in the Information and Communication Technology industry, teachers are yet to own and operate laptops personally or for teaching and learning purposes. This perhaps could be as a result of a lack of ICT facilities, unreliable electricity, affordability constraints, inadequate training, and a lack of government support to schools and teachers, which in turn has a direct effect on technology integration in the primary schools. Also, high poverty level in the nation and poor salary structure for teachers, which has made them remain poor regardless of the number of years put in service (Information Nigeria and Premium Times, as cited in Cleopas, 2023). This is also in agreement with the study of Normandin (2022), titled, "Impact of poverty on education and success". Teachers find it difficult

to pay for and attend conferences and workshops for personal development. This may be due to poor remuneration, which is not sufficient to meet with day to day expenditure of family upkeep. The study also revealed that government basic schools are still impoverished and unprepared for the new normal due to the unavailability of ICT facilities, projectors, power supply, chairs, desks, and internet connection for e-learning. It is disheartening to discover that some privately owned and managed basic education schools have put these facilities in use, and government officials' children attend these schools. The teen population of parents who cannot afford to pay for their children in these privately owned basic schools is left to make do with what the government provides. If the private owners of schools can make provision for the new normal, the government should do much better. This is in confirmation with the work of Brzezinski (2022), titled, "the effect of poverty on quality of education".

The study also revealed that most children go to school without food and are hungry in the course of receiving lessons. Also, there is a high mean of lateness to school and absenteeism. How can hungry children listen, understand, assimilate, retain, and recall what is taught in class? This is in agreement with the study of Normandin (2022), titled, "Impact of poverty on education and success". An adage says, "a hungry man is an angry man". No wonder they are hostile, aggressive, and badly behaved (Cleopas, 2023). Perhaps this is because of the poverty of their parents. Parents could no longer cater for their families due to financial incapacity. Hunger could make children vulnerable to abuse, molestation, misbehaviour, crime, and sickness. In addition, there will be a high rate of truancy, lateness, absenteeism, and poor academic performance. This is in agreement with the work of Brzezinski (2022), titled, "the effect of poverty on quality of education". These characteristics develop with them, surface in their youth, and then in adulthood. No wonder there are more children looking unkempt, sick, and a high mortality rate in the country. This is in agreement with the study of Normandin (2022), titled, "Impact of poverty on education and success". This study is also in agreement with the report of the United Nations (2021) that a high percentage of children are hungry and poor, and UNESCO (2023) revealed that the majority of children globally are not learning. This learning challenge has worsened as studies showed that out-of-school children have increased by 6 million since 2021 and totaled 250 million in 2023. Despite the fact that most basic education pupils' parents are educated, yet, they cannot afford to take care of the basic necessities (food) of their children. This shows how poor the nation is today. This is in line with the report of UNICEF (as cited in Cleopas, 2023), UNESCO (2023), and the United Nations (2021). This is also in agreement with the study of Normandin (2022), titled, "Impact of poverty on education and success" and the work of Brzezinski (2022), titled, "the effect of poverty on quality of education". The reports revealed that the majority of children are hungry and poor; hence, they have no capability to learn. Poverty is a menace that Africa and Nigeria in particular, need to address with all objectivity. It is a serious concern if parents cannot feed their children, clothe their children, and buy textbooks and other materials for school. If the next generation of Nigerian children is uneducated today, what will be the poverty level of the country? No wonder UNICEF (2022) opined that education goes beyond an investment in children's future but in poverty reduction, self-development, sustainability, economic and national development. Then, we are yet to start preparation for 21st century education (Uzundu, 2021).

5. CONCLUSION

The 21st century education cannot be realistic without innovation and technology. It is the education that is technologically, scientifically motivated, and result-oriented. Nigerian children should not be left behind these dynamics of their age in order to fit in properly in the future. The inclusion of digital literacy in the primary education level is crucial in the pursuit of the 21st century education and actualization of the SDGs in 2030 (Ifarajimi, 2023) in Africa and Nigeria in particular. Educational technologies provide an avenue for individualized learning, collaborative learning, and can cover a wide range of groups of children, such as the poor, marginalized, and disadvantaged, when inclusively, ethically designed and implemented Duraiappah et al. (as cited in Outhwaite et al., 2023). The report showed that when children have a sound background in numeracy and literacy skills, they become educationally, socially, and economically empowered (Barnett, as cited in Outhwaite et al., 2023). Any society that prepares its youth today is preparing them to secure their future and for leadership positions. This implied that society must prepare the children who would metamorphose into youth tomorrow for leadership roles. The education for the 21st century is functional, relevant, and practical education for life skills and attitude, education for peace, digital literacy and education for self-reliance. This is the education we crave for, if Nigeria must be prepared

for the 21st century and its emerging issues. The study was limited to only two Local Government Areas in Bayelsa State, relied on self-reported data, and lacked qualitative insights. Further study could be carried out in longitudinal studies to monitor changes in preparedness over time and use of mixed method approaches to capture deeper conceptual factors influencing readiness. Based on the findings and conclusions, the study advocated for professional capacity development for primary school teachers on effective use of mobile devices for teaching and learning, especially where laptops and ICT facilities are unavailable. The government should be committed to addressing the economic state of the nation. Also, the government should invest in infrastructure, electricity, connectivity, an ICT laboratory, and social support programs to mitigate poverty-related barriers to learning. And there should be a review of the curriculum to suit the requirements of skills and attitude for the 21st century.

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Data Availability Statement. The author declares that all data generated or analyzed in the study and supporting the findings of this study are available within the paper.

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REFERENCES

- Anigbogu, V. C. (2022). *Digital transformation in higher education: A response to conceptionalized national and global needs*. Keynote address presented during the 23rd founders day celebration of Igbinedion University Okada 10th May.
- Anyanwu, J. C. (2014). Does intra-African trade reduce youth unemployment in Africa? *African Development review*, African Development Bank, 26(2), 286-309, <https://doi.org/10.1111/1467-8268.12082>
- Brzezinski, M. (2022). *The effect of poverty on the quality of education*. Honours Thesis, Louisiana State University, 196, 1-21. https://repository.lsu.edu/honours_etd/196
- Chacaltan, J., Barrucci, V. & Moreno, M. (2024). *Youth employment policies: pattern and trends in two unique data sets*, ILO working paper 108. Geneva: International Labour Office, 2024. <https://doi.org/10.54394/Q1UB5931>
- Chikoko, V. & Mthembu, P. (2021). The impact of poverty on basic education in South Africa: A systematic review of literature. *Systematic Review of Research in Basic Education in South Africa*, 69-90, <https://doi.org/10.18820/9781991201157/03>
- Cleopas, B. C. (2022). Educational implications of COVID-19 in Africa. *Niger Delta Research Journal*, 14(2), 305-316.
- Cleopas, B. C. (2023). Peace education at the basic education level: A panacea for national development. *Nigerian Journal of Curriculum Studies*, 30(2), 28-39.
- Dike, H. I. (2024). Innovative technology in education for economic development in Africa. Key note speaker at the 8th International Annual Conference of Niger Delta University, Faculty of Education, 5th -9th August 2024.
- Egede, B. A & Asabor B. M. (2019). Integration of technology in the training of education teachers in Nigeria: Issues, challenges and prospect. *ADECT 2019 Proceedings*, 35, <https://open.library.okstate.edu/adect/>.
- Eya, P. E. & Eya, G. M. (2022). Technology integration in repositioning education for sustainable youth empowerment and national development. *International Journal of Education, Library and Information Communication Technology*, 1(1), 1-7, <https://ijelict.acu.edu.ng/index.php/ijelict/article/view/70>
- Federal Republic of Nigeria (2013). *National Policy on Education*. Lagos 6th edition NERDC Press.
- Federal Republic of Nigeria (2014). *National Policy on Education: Lagos* 6th edition NERDC Press.
- Gambari, A. I. (2021). Educational technology: The nexus of the 21st century education and beyond. 84 *Inaugural Lecture Series Federal University of Technology Minna*.

- https://books.google.com.ng/books/about/Educational_Technology.html?id=9yRdzwEACAAJ&redir_esc=y
- Ifarajimi, M. A. (2023). The trends and innovations in curriculum development and delivery in the digital age. *Sapientia Global Journal of Arts, Humanities and Development Studies*, 6(2), 185-198
- International Labour Organization (2019). *Youth Employment Programme (YEP) Technical Notes*.
- Kalogiannidis, S., Savvidou, S., & Konteos, G. & Papaevangelou, O. (2023) investigate the impact of technology integration on teaching and learning in the primary school classroom on economic growth. Springer Proceedings in Business and Economic. In N. Tsounis & A. Vlachvei (Eds.), *Advances in Empirical Economic Research* (pp. 417-432). Springer. https://doi.org/10.1007/978-3-031-22749-3_26
- Mpuangnan, K. N. (2024). Teacher preparedness and professional development needs for successful technology integration in teacher education. *Cogent Education*, 11(1), 1-15, <https://doi.org/10.1080/2331186X.2024.2408837>
- Normandin, B. (2022). Impact of poverty on education and success. *Honours Contract Paper*, 1-14, https://scholarworks.merrimack.edu/honours_component
- Outhwaite, L., Ang, L., Herbert, E, Sumner, E. & Herwegen, J. V. (2023). *Paper commissioned for the 2023 Global Education Monitoring Report, Technology in Education*. UNESDOC Digital Library, 1-32. <https://doi.org/10.54676/GUXK4594>. <https://unesdoc.unesco.org/ark:/48223/pf0000386108>
- Pappa, C. I., Georgiou, D. & Pittich, D. (2024). Technology education in primary schools: addressing teachers' perceptions, perceived barriers, and needs. *International Journal of Technology and Design Education*, 34, 485–503, <https://doi.org/10.1007/s10798-023-09828-8>
- Piajet, J. (1936). *Theory of cognitive development*. Simply psychology. <https://www.simplypsychology.org/piaget.htmlss>.
- Sobowale, F.M., Mohammed, I.A., Fati Ali, B. & Sadiku, A. (2024). Development and evaluation of mobile learning application for practical chemistry among pre-service teachers. *Discover Education*, 3, 252. <https://doi.org/10.1007/s44217-024-00352-y>
- UNESCO in brief –mission and mandate @ UNESCO in brief...<https://en.unesco.org> (Accessed 20/07/2021) <https://www.unesco.org/en/brief>
- UNESCO. (2023). *250 million children out of school: What you need to know*. <https://www.unesco.org/en/articles/250-million-children-out-school-what-you-need-know-about-unescos-latest-education-data>
- UNICEF (2022). *Sustainable Development Goals* <https://sustainabledevelopment.un.org/index.php?page=view&type=30022&nr=3221&menu=3170>
- United Nations. (2021). *Department of Economy and Social Affairs. Sustainable Development*. <https://sdgs.un.org/goals>
- United Nations. (2021). *The Sustainable Development Goals Report*. Available from: <https://unstats.un.org/sdgs/report/2021/The-Sustainable-Development-Goals-Report-2021.pdf>
- Uzodinma, U. E., Njoku, O. C. & Ejiofor, J. N. (2024). Assessing the impact of technology integration in enhancing learning outcomes on childhood and primary education in Nigeria: A case study of hill crest preparatory and primary school, Nsukka. *International Journal of Studies in Education*, 20(2), 31-41, <https://ijose.unn.edu.ng/wp-content/uploads/sites/224/2024/07/Paper-20.2.4.pdf>
- Uzondu, I. C. (2021). Innovative trends and advances in education and communication in Africa. *AJAP-Amamihe Journal of Applied Philosophy*, 19(3), 120-134. https://www.igwebuikerresearchinstitute.org/o_journals/AMAMIHE_JOURNAL_19_3_8.pdf