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Research Article

Childhood development in the 21st century: The role of technology in health and technology-based education in Nigeria

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Abstract: Technology is drastically changing the health sector and education landscape, generating new opportunities, introducing new applications, and rejuvenating or reinventing classical technologies for childhood development. Understanding the role of technology in health and education is crucial to the development of a child. This paper am at examining the perceptions of health workers and teachers on the role of technology in health and education and whether such role (s) can promote childhood development. A total of 22 participants (10 health workers and 12 teachers) were involved in the study and were sampled using propulsive sampling procedure. A survey research design methodology was used with the average reliability coefficients for the two structured questionnaires stood at 0.79 and 0.74. The data were analyzed using descriptive statistics. The result reveals that technology plays a significant role in healthcare and education and promotes childhood development to a very high extent. Specifically, in health, technology improves the dissemination of health information, facilitates public discourse and dialogue around medical health, and enables remote consultation, diagnosis among others. While, in education, technology helps students learn much better, improves communication and collaboration, provides teachers with more resources and allows children to learn at their own pace among others. Despite the positive roles of technology, the study indicates that must health workers and teachers in Nigeria do not frequently utilize technology tools in their healthcare delivery and the classroom for child's development. This research provides an up-to-date picture of the situation in Nigeria notwithstanding the challenges faced. However, health and education administrators should investigate the non-frequent use of technology by health and teachers to mitigate it negative effect on young children.

Keywords: Childhood development, health, technology, technology-based education

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1. Introduction

The speed at which technology permeates more areas of our daily lives has significantly changed how children are developed. Globally speaking, the new education system emphasizes the importance of fostering children's development through technology as a critical 21st-century requirement for a complete child. (Nelson, 2000; Rogoff, 2003) stated that human development reveals that learning happens from birth. This suggests that early life experiences significantly influence how a child will grow, learn and function for the rest of their lives.

Therefore, early childhood health habit and education is considered to be the crucial period when young children acquire the advanced development of their mental, moral, physical, social, emotional, spiritual, and human capital (Ball, 1994; Irwin, Siddiqi, & Hertzman, 2007; Sigelman, De George, Cunial, & Rider, 2018). According to the fundamental practice of learning (Bruce, 2012), children learn most effectively through actions, rather than instruction. Although, children need to engage all their senses in the process of learning; for them, learning is doing and their technological intellectual development will help in the preparation for effective education to promote social welfare, and social order, and to develop a world-class workforce (Kanter, 1997; Leitch, 2006; Stewart, 2012).

The trajectory and course of a child's growth within an individual are influenced by several things. These comprise the child's inherent qualities or biological make-up as well as outside factors including culture, family, society, economics, and health (Council, Children, Youth, & Health, 2004; Slee, 2002). A child's cognitive development as they learn about the world around them when they are exposed to a variety of educational apps and digital learning tools can make learning more interactive, engaging, and personalized for children (Chiong & Shuler, 2010; Hirsh-Pasek et al., 2015; Kucirkova, Messer, Sheehy, & Panadero, 2014). The theories of cognitive development concentrate on how kids learn. Renowned theorist Jean Piaget focused on what and how youngsters know. In Lev Vygotsky's sociocultural theory, children's knowledge is socially created. Children pick up the problem-solving techniques of their culture as a result of social interactions with more experienced members and objects. Childhood in this study refers to children between the ages of 3 to 11 years and specifically highlights the role of technology in their upbringing. Information and communication technology (ICT) encompasses a range of desktop and mobile platforms, interactive toys, and web-enabled technology (Arnaiz et al., 2010; Corrocher, 1999; Melhem, Morrell, & Tandon, 2009). These technologies serve as channels for children to consume interactive media and related popular culture (Buckingham, 2013; Kline, Dyer-Witheford, & De Peuter, 2003). This underscores the importance of the application of technology in education. Although, most researchers (Al-Senaidi, Lin, & Poirot, 2009; Johnson, Jacovina, Russell, & Soto, 2016; Salehi & Salehi, 2012) have highlighted the challenges of integrating educational technology at the classroom level despite the positive gains. In Nigeria, since technology adoption is more than just a technological issue, there are no uniform answers to the problems. Rather, elements related to innovation and other organizational, sociological, economic, and psychological aspects influence the rate of adoption and this leads to a child's lack of preparation for formal schooling at the childhood level.

When interactive technology is included in play-based learning activities for children, it helps them develop their technical skills, inquiry practice, and capacity to generate abstract concepts (Buckingham, 2013; Kline et al., 2003). Children's cognitive growth and their active engagement in school and play, which are essential for the development of basic 21st-century abilities, are both improved by the continued use of technology in education (Ghavifekr, Kunjappan, Ramasamy, & Anthony, 2016). While play and tangible items are essential to a child's cognitive development, keeping up with modern technology is also frequently considered a critical component of modern digital literacy. It's well known that children have an innate curiosity about everything as they strive to figure out how the world works. As a result, they develop as learners through researching difficulties in their environment and acquiring problem-solving techniques.

Besides, adopting ICT is drastically changing the health-sector landscape, generating new opportunities, introducing new applications, and rejuvenating or reinventing the classical ones (Aceto, Persico, & Pescapé, 2018). Today, the rising availability and quality of medical software applications in the shape of mobile apps brought about rapid integration of mobile devices into clinical practice (Baig, GholamHosseini, & Connolly, 2015; Liu, Zhu, Holroyd, & Seng, 2011). In addition to the various specific meanings these ICT paradigms carry in the healthcare industry, many new ICT-based healthcare paradigms have surfaced in recent years. These ICT-based paradigms are redesigning modern healthcare with promising technological, economic, and social prospects (Alekseeva, Ometov, Arponen, & Lohan, 2022). These ICT developments are contributing to the alleviation of several long-standing health-related problems, such as supporting the aging population and those with chronic illnesses or obesity. As well as, facilitating the development of new methods and the administration of storage resources to support the expansion of digital data generated by the clinical and medical communities. Through technology, first-hand health monitoring and medical care are facilitated (Haluza & Jungwirth, 2014). Making it possible for governments to provide value-added services to citizens and discloses several opportunities. For example, using monitoring to leverage prevention can now effectively address chronic diseases. It is possible to attend to individuals' basic requirements promptly and offer patient-centric services resulting in a health system that gives people greater control over their health by providing them with competent, individualized health information and allowing them to receive quality medical care even from home. According to (Albahri et al., 2018; Tian et al., 2019) technology improved treatment methods, as health professionals can manage their activity more efficiently, and conveniently monitor the quality of hospitals and medical services.

Given the increasing incorporation of technology in education and healthcare, one would have thought that technology ought to have completely changed the fields of education and healthcare by opening up new avenues for better education, better healthcare delivery, and more individualized and efficient services. However, there seems to be a misunderstanding among many of those responsible for childhood training, about the learning and teaching issues raised by the increased use of ICT resources (Downing, 2001; Petty, 2013). Most Early Childhood Development (ECD) centers still perceive the use of ICT to be designed strictly for administrative and management purposes while most countries are still reluctant to embed ICT in their curriculum practices (Aldhafeeri, Palaiologou, & Folorunsho, 2016; Palaiologou, 2016). Literature (Aldhafeeri et al., 2016; Cloete, 2017; Downing, 2001; Edirippulige et al., 2018; Logeswaran, Munsch, Chong, Ralph, & McCrossnan, 2021; McIlhenny, Guzic, Knee, & Roberts, 2011; Palaiologou, 2016; Petty, 2013) among others relating to the use of ICT in healthcare and education abound seeking to draw attention to the role of technology in modern society as it relates to the catch-them-young mantra of the digital revolution age. There is, therefore, the need to amplify the role of information technology and determine how best to utilize it to ensure that internet-based materials are not regarded merely as a source of information but as a basis for more constructivist learning. Thus, this study looked at the role of technology in health and education vis-a-vis childhood development. Precisely the following objectives shall guide the study.

1. Health workers' perception of the role(s) of technology and whether such a role can promote childhood development
2. Teachers' perception of the role(s) of technology in education and whether such a role can promote childhood development
3. Health workers' frequency of use of technology medical tools in health

4. Teachers' frequency of use of technology tools /materials in the classrooms

2. Literature Review

2.1 Related works on childhood development in relationship to technology in health and technology-based education

A lot of scientific literature has discussed childhood development in several domains concerning technology. (Britto et al., 2017) defines childhood development as the child's genetically influenced characteristics unfolding according to a maturational timetable and moving forward through a series of tasks and challenges of increasing complexity that the child must master to extend his/her ability to function within his/herself and the environment. Transactionally, (Hessle & Vinnerljung, 2000) see child development as a product of the continuous dynamic interactions between the child and the experience provided by his/her family and social context. (Sage & Burgio, 2018) survey how wireless technologies can affect childhood development. (Novak & Graham, 2019) investigated how obstetric management, tests, and technologies designed to diagnose and treat fetal conditions can have an impact on child development. (Dimitri, 2019) gives an insight into how child health technology is shaping the future of pediatrics and child health and improving National Health Scheme (NHS) productivity. The research work (DeWitt, 2024) examines the potential of health technologies to improve child health

Outcomes by assisting and guiding parents. (Radesky & Christakis, 2016) analyzed the implications of increased screen time for early childhood development and behavior. (Nobre et al., 2020) conducted a multicriteria analysis on the quality of interactive media use in early childhood and child development: Several surveys discuss the adoption of technologies and childhood development in education. (Ogegbo & Aina, 2020) presented an overview of teachers' perceptions of the use of technology in teaching young children for childhood development. (Keengwe & Onchwari, 2009) presented a technology integration professional development model for practicing teachers on the use of technology in early childhood education. (Donohue, 2003) discussed the need for technology in early childhood education. (Blackwell, Lauricella, & Wartella, 2014) looked at the factors influencing digital technology use in early childhood education. (Ukwueze & Ajala, 2014) reported the role of information and communication technology in early childhood education. (Turja, Endepohls-Ulpe, & Chatoney, 2009) developed a conceptual framework for developing the curriculum and delivery of technology education in early childhood. (Siu & Lam, 2005) focused on employing the sociocultural perspective in early childhood technology education. (Siu, Lam, & Renck, 2003) summarize the implications of the use of technology education in Hong Kong for implementing the "eight Cs" in the early childhood curriculum

2.2 The role of technology in health and technology-based education perspective on childhood development

Every aspect of contemporary life is impacted by technology, which also greatly affects children's development. Without question, digital devices significantly impact how youngsters receive, absorb, and digest information. Digital learning platforms and educational apps provide dynamic, interactive ways to acquire knowledge and develop skills because technology encourages participation and enhances understanding in a variety of subjects. Regarding this, Berris and Miller (2011) assert that the majority of educators and parents appear to acknowledge the value of technology in the education of young children. Even though educators believe that technology is an essential component of education for kids, some of them continue to object to the usage of technology in preschools because they prefer that kids

play primarily outside (Berris & Miller, 2011). However, studies show that integrating and utilizing technology in early childhood learning environments is becoming more and more important, particularly for kids who don't have much or any access to it at home (O'Rouke, 2004). (Mertala, 2019) that using technology in early childhood classrooms helps promote a child's learning progress and makes learning more visible. Technology usage in early-year classrooms makes learning fun (Pirani & Hussain, 2019). Employing ICT in classrooms is a crucial tool for increasing children's literacy skills (ÖZET, 2024). For example, it makes it easier for students to understand and pronounce phonic sounds because they are listening to them and can speak them correctly, as opposed to perhaps when the teacher pronounces them incorrectly. (Joines, 2023; Kaye, 2016) averred that listening to audio also helps children develop their language skills. It's a general belief that using technology for children is good because while traditional teaching methods are boring, engaging children in using videos or sounds, makes them engaged and active in the classroom. According to (Zahra & Alanazi, 2019) technology has an impact on both the physical and psychological health of children. However, according to child psychologists, excessive use of technology has many negative effects on children's psychological and physical health, which may have long-lasting effects on their development (Plowman, Stevenson, Stephen, & McPake, 2012). Pediatric occupational therapist, Cris Rowan revealed the health issues responsible for why parents should control the usage of digital technologies for children younger than 12 years old. The researcher highlighted the risk of obesity, developmental delays, sleep deprivation, language and speech problems, and irritability among others as some of the problems of technology usage (ÖZET, 2024).

3. Methodology

The study adopted a survey research design to address the research questions. This research approach was chosen because the study aimed to understand individual or group perspectives relative to health professionals and basic school teachers' perceptions about the role of technology in health and education as it affects childhood development. Two structured research questionnaires emanated for the survey and were used as instruments for data collection. These instruments were titled Teachers' Perception of the Role of Technology in Technology-based Education (TPRTTE) and Health Workers' Perception of the Role of Technology (HWPRT). Each instrument was divided into four (4) sections A, B, C, and D. Section A of the two instruments collected respondents' demographic data such as name, age, qualification, number of students taught/observed, and years of work experience. Section B of TPRTTE elicited information about teachers' perception of the role of digital technologies in education, Section C collected information on the extent the roles promote childhood development and Section D elicited information about the frequency of use of digital technology tools /materials in the classrooms while Section B of HWPRT elicited information about health workers' perception of the role of digital technologies in health, Section C collected information on the extent to which the roles promote childhood development and Section D elicited information on the frequency of use of digital technology medical tools in health. Items originally generated by the researchers were modified before the pilot stage by two (2) experts each in health and education for face, construct, and content validity. The questionnaires were piloted using five (5) participants each of childhood education teachers and health workers who were part of the population but were not part of the sample frame of the study. The reliability was obtained using Cronbach alpha reliability 0.78, 0.76, and 0.82 for sections B, C and D of TPRTTE, and 0.77, 0.69, and 0.77 for sections B, C, and D of HWPRT were obtained to determine

the internal consistency of the instruments. Purposive sampling was used to select the respondents based on years of work experience.

A total of 22 (10 health workers and 12 teachers) participants were involved in the study, with a response rate of 100%. 50% of the Health Workers Participants (HWP) were Doctors and 50% Nurses. The ages of the HWP range between 29 - 46, they have observed children ranging from 2 - 13 on their ICT usage and the years of experience of the HWP were within the ranges of 4 - 21. The ages of Teachers Participants (TP) were 25 – 48 with 2 holding master's degrees, 8 holding Bachelor's degrees, and 2 Nigeria Certificate in Education (NCE) and years of teaching experience ranging from 4-22 years.

For the results to be well understood, descriptive statistics were used in the presentation of the results because non-experienced researchers can more easily understand descriptive statistics since the findings will be disseminated beyond the participants.

4. Result

The data presentation and analyses were based on the research questions formulated for the study Research question 1: What are health workers' perceptions of the role(s) of technology in education and whether such a role can promote childhood development?

Table 1 –Perception of health workers on the role of technology in health

ICT...	P_1	P_2	P_3	P_4	P_5	P_6	P_7	P_8	P_9	P_{10}
1. improve dissemination of health information	√	√	√	√	√	√	√	√	■	√
2. facilitate public discourse and dialogue around medical health	√	■	√	√	√	√	√	√	√	√
3. enable remote consultation, diagnosis and treatment	√	√	√	√	√	√	√	√	√	■
4. facilitate collaboration and cooperation among health workers	√	√	√	√	√	√	■	√	√	√
5. support more effective health research and the dissemination and access to research findings	√	√	■	√	√	√	√	√	√	√
6. strengthen the ability to monitor the incidence of public health threats and respond in a more timely and effective manner	√	√	√	√	√	√	√	√	√	√
7. improve the efficiency of administrative systems in healthcare facilities to prevent medical errors	√	√	√	√	√	√	√	√	√	■

Notation: *P = Participant 1…10, √ = Agree, ■ = Disagree*

As shown in Table 1, the majority of the health workers (90.0%) agree to all items that using technology in health improves the dissemination of health information, facilitates public discourse and dialogue around medical health, enables remote consultation, diagnosis, and treatment, facilitate collaboration and cooperation among health workers, support more effective health research and the dissemination and access to research findings, strengthen the ability to monitor the incidence of public health threats and respond in a more timely and effective manner and improves the efficiency of administrative systems in healthcare facilities to prevent medical errors. However, only about 10% disagreed with each of the items measured giving an overall 91.43% acceptance and 8.57% rejection rate. It is crystal clear

from the results that irrespective of the ages, years of working experience, and educational qualifications of the health workers, they are all aware of the important roles of the use of technology in health.

Table 2 – To what extent does the role(s) of technology in health promote childhood development?

Participant	Very high	High	Neutral	Low	Very low
P1	✓				
P2	✓				
P3	✓				
P4		✓			
P5		✓			
P6	✓				
P7		✓			
P8		✓			
P9		✓			
P10			✓		

Notation: *P = Participant 1…10*

Table 2 attempt to provide answer to the extent to which the role of technology promotes childhood development in healthcare. Majority (90.0%) of the health workers started that using technology in health highly promote childhood development whereas only 10% were undecided. Again, it is evident from the results that no matter the ages, years of working experience and educational qualification of the health workers, they agreed that the impact of technology in promoting childhood development is high.

Research question 2: What are teachers' perceptions of the role of technology in education and whether such a role can promote childhood development?

Table 3 – Perception of teachers about the role of technology in Technology-based education

ICT...	P_1	P_2	P_3	P_4	P_5	P_6	P_7	P_8	P_9	P_{10}	P_{11}	P_{12}
1. helps students learn much better	√	√	√	√	■	√	√	√	√	√	■	√
2. improvise communication and collaboration	√	■	√	√	√	√	√	√	√	√	√	√
3. provide teachers with more resources	√	√	√	√	√	√	■	√	√	√	√	√
4. allows children to learn at their own pace	√	√	√	√	√	√	√	√	√	√	√	■
5. create more opportunities for online project-based learning	√	√	√	■	√	√	√	√	√	√	√	√
6. personalized learning opportunities	√	√	√	√	√	√	√	√	■	√	√	√
7. enable efficient problem-solving and thinking abilities	√	√	√	√	√	√	√	√	√	√	√	√
8. save time and money	■	√	√	√	√	√	√	■	√	√	√	√
9. enable better understanding of lessons through graphics	√	√	■	√	√	√	√	√	√	■	√	√

Notation: *P = Participant 1…12. √ = Agree. ■ = Disagree*

Table 3 presents the frequency of distribution of the level of agreement or disagreement to some statements about teachers' perception of the role of technology in technology-based education. Teachers

were to indicate their level of agreement with the items listed. As revealed in the table, majority of the respondents (about 90.0%) agreed with each statement. This indicates teachers believe that technology helps students learn much better, improves communication and collaboration, provides teachers with more resources, allows children to learn at their own pace, creates more opportunities for online project-based learning, personalized learning opportunities, enables efficient problem-solving and thinking abilities, save time and money and enable better understanding of lessons through graphics. Overall, 89.81% agreed while 10.19% disagreed with the central statement. This implies that despite age, years of working experience, class size taught and educational qualification of the teachers, they are all aware of the importance of technology usage in the classrooms for childhood development.

Table 4 - To what extent does the role(s) of technology in technology-based education promote childhood development?

Participant	Very high	High	Neutral	Low	Very low
P1	✓				
P2		✓			
P3	✓				
P4	✓				
P5	✓				
P6	✓				
P7		✓			
P8	✓				
P9		✓			
P10			✓		
P11				✓	
P12	✓				

Notation: *P = Participant 1…10*

Table 4, it was sought to answer the question of the extent to which the role of technology promotes childhood development in the classroom. The majority (about 80.0%) of the teachers indicated technology plays a very significant role in technology-based education as it highly promotes childhood skills development. Overall, 83.33% agreed, 8.33% disagreed and 8.33% were undecided. This suggests that the age, years of working experience, and educational qualification differences of teachers do not cause teachers not to realize the extent of technology in promoting childhood development in the classroom.

Research question 3: What is the frequency of use of technology medical tools in health?

Table 5 - Health workers' frequency of use of technology tools in healthcare

ICTtools/materials	Always	Very often	Sometimes	Rarely	Never
1. Clinical decision support	0	0	0	1	9
2. Computerized disease registries	0	1	0	2	8
3. Computerized provider order entry	0	0	0	0	10
4. Consumer health IT applications	3	4	0	3	0
5. Electronic medical record systems (EMRs, EHRs, and PHRs)	0	1	0	1	8
6. Electronic prescribing	0	0	0	2	8
7. Use apps for medical purposes	7	2	0	1	0
8. Access to the internet	6	4	0	0	0
9. Telehealth	0	0	0	1	9

In this aspect of the questionnaire as shown in Table 5 the focus was to obtain the views of health workers on the frequency of use of technology tools in healthcare. Some health technology tools and materials were stated for health practitioners to indicate their level of use in healthcare administration. In the question concerning the use of clinical decision support 10 participants representing 100% claimed that they never used it. Only 1 representing 10.0% had used computerized disease registries and 90.0% claimed that they had not used them. 10 representing 100% indicated that they have not used the computerized provider order entry. 7 representing 70.0% indicated that they have used consumer health IT applications whereas 30.0% had not. In the question as to whether they have used electronic medical record systems (EMRs, EHRs, and PHRs, only 1 participant (10.0%) has used it while 9 (90.0%) have not. For questions regarding electronic prescribing 10 (100%) indicated that they have not used the tool. Additionally, when they were asked whether they use apps for medical purposes, 9 (90.0%) responded that they have used them, 10 (100%) claimed that they have access to the internet, and 10 (100%) said they have not used telehealth. Overall, 31.11% have frequently used health technology tools in health administration while 68.89% claimed they have not used them. This indicates that most health workers in Nigeria do not frequently utilize health technology in healthcare delivery.

Table 6 - Teachers' frequency of use of technology tools/materials in the classrooms

ICTtools/materials	Always	Very often	Sometimes	Rarely	Never
1. Television set	1	1	0	2	8
2. Video recorders, DVDs, and CD recorders	0	0	0	2	10
3. Computer/Laptop/Phone	2	0	0	0	10
4. Video projectors	0	1	0	2	9
5. Electronic toys	0	0	0	4	8
6. CD player/digital radio	0	0	0	2	10
7. Use apps for educational purposes	8	2	0	1	1
8. Access to the Internet	9	2	0	1	0
9. Digital photo camera and digital video camera	0	0	0	1	11
10. Interactive whiteboard	0	0	0	0	12

Table 6 reports the frequency distribution of the extent of agreement or disagreement with some statements about using technology tools/materials in the classrooms. The majority disagreed with items 1, 2, 3, 4, 5, 6, 9, and 10 representing 83.33%, 100%, 83.33%, 91.67%, 100%, 100%, 100%, and 100% respectively. However, the majority agreed with statements 7 and 8 representing 83.33% and 91.67% respectively. This indicates that a high percentage of teachers agreed strongly with the statements that teachers made use of apps for educational purposes and have access to the internet in the classroom. Overall, 78.33% do not frequently use technology tools in their classrooms while 21.67 claimed that they frequently use them.

5. Discussion of findings

There are still a lot of issues in 21st-century childhood development that need to be resolved, such as in-cooperating technology in healthcare and education by developing a curriculum that is widely accepted for the pedagogy that should be used when teaching our children because the current role of

technology is replacing the outdated one. The finding for research question one presented in Table 1 shows that the health professionals perceived technology as a useful tool for childhood development. This finding agrees with (Jimoh, Pate, Lin, & Schulman, 2012) whose study shows a statistically significant perceived usefulness of health workers' adoption of technology in health. (Ketikidis, Dimitrovski, Lazuras, & Bath, 2012) whose research findings showed perceived ease of use, the relevance of Health Information Technology (HIT) to the medical and nursing professions which should be tapped by information campaigns aiming to enhance support for HIT in healthcare settings. (Shekoni et al., 2024) who investigated using mobile health technologies in public health facilities in Lagos, Nigeria, and found that mobile health enhances patient-provider communication and saves time. Also, the study agrees with the earlier research work of (Edo et al., 2023) whose findings on why healthcare workers adopted digital health technology supported five of the proposed hypotheses including the perceived usefulness of ICT technology in healthcare. While e-health is benefiting from the continuous development of new ICT solutions, researchers have discovered that the widespread adoption of cutting-edge ICT technology is fundamentally altering the environment in the health sector, bringing new opportunities and applications while revitalizing or reinventing the traditional ways of healthcare delivery. Mobile communication has the enormous potential to change clinical intervention and healthcare in the community. The use of mobile phones to support public health and healthcare interventions has been the subject of several prior studies (e.g., in support of data integration and collection for healthcare research as well as medical education, clinical practice, telemedicine remote healthcare, and information delivery in rural areas). The use of smartphones has increased dramatically since the introduction of specially created apps, and many fields are developing creative, niche applications (such as applications for orthopedic decision support, off-site radiology access, infectious disease tracking, and reference material storage).

The finding in research question two shows that the overall response of teachers can be categorized as that they perceive technology usage to be very useful in promoting childhood development in the classroom. This finding agrees with contemporary research findings (Ogegbo & Aina, 2020) which noted that teachers understood the advantages of technology incorporation in early childhood education and have a positive mindset about using ICT in teaching and learning in the early years. (Ihmeideh & Alkhawaldeh, 2017) who averred that teachers and parents considered the contribution of Technology and Digital Media (TDM) to child culture as relatively high. (Mertala, 2019) who found the usefulness of technology in education and noted that an individual teacher can be for or against technology usage depending on the frame they reflect on technology integration through. (Zepp, 2005) who recommend that potential educators be made more aware of the various roles of technology in education, and how teacher-technology synergies can be tapped. (Ventouris, Panourgia, & Hodge, 2021) whose research results suggested teachers recognized the importance of technology as a learning and teaching tool. (Dong & Mertala, 2021) who sees technology as perceived to affording efficiency and assistance, particularly for teacher-centered practice. Following the trend of findings teachers can reexamine their play-based pedagogy concept to help children appreciate the importance of the wider use of digital technologies in their classroom practice. In that, digital technology can be integrated into a play-based pedagogy that builds on children's home and school experiences and is reciprocal. It is observed from the findings in this research that although teachers understand the importance of technology but do not

incorporate it as part of play-based pedagogy, notwithstanding the digitalization of homes and the ensuing usage of digital gadgets by young children. Going back to Bourdieu's concepts of cultural capital and habitus, it seems that educators have not thought through how children's preexisting digital capabilities can be integrated and developed within a play-based pedagogy. The use of technology in the classroom to support teaching, learning, and other cognitive activities, as well as the development of children's literacy skills, becomes increasingly important in promoting quality childhood development intellectually. With the prevalence of ICT use among children of all age groups today and the rising advancement of ICT practices in education. This study adds to the body of information about the need to use ICT in the classroom and how to assess the efficacy of ICT implementation in fostering high-quality childhood education in Nigeria.

6. Conclusion

While technology can have great benefits on education and health, it can also have detrimental effects. Health professionals and educators ought to capitalize on this and remove the obstacles standing in the way of hospitals and other institutions using technology. Given the importance of technology, it is therefore imperative that all nations implement more advanced technical healthcare and education programs for the 21st century to foster childhood development.

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7. Conflict of Interest

The author declare that there is no conflict of interest regarding the publication of the paper this article.

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