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Digital Education And Children's Literacy Development In Nigeria; A Panacea To Development

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ABSTRACT

Early childhood education is a unique learning phase where teachers must employ specific strategies to support children's development and reading and writing skills. Using stories to educate in a virtual classroom is one of these strategies. The effectiveness of digital education in improving the literacy development of Nigerian preschoolers was investigated in this study. The study's goal was to investigate how children's literacy development was impacted by the use of digital schooling. The methodological basis for the study was qualitative content analysis. According to the study, teachers had very positive opinions regarding the use of digital storytelling. The educators also employed digital storytelling, which involved narrating stories digitally and playing various music and poetry videos. According to the study, children's literacy development improves from digital storytelling in a variety of ways, including increased self-awareness, improved letter recognition, and improved pronunciation. Others include the capacity for effective self-expression and the acquisition of new abilities. Other positive attitudes and habits, such being self-assured, outspoken, and skilled communicators, are also picked up by the children from some of the movies. According to the study, Nigeria's adoption of digital storytelling was impacted by traditional, cultural, and economic factors. According to the report, Nigeria's Federal Ministry of Education must swiftly draft regulations ensuring that digital storytelling is used as a teaching technique in all federation schools. This will help guarantee that every school has the infrastructure and know-how to teach via digital storytelling, and there won't be any excuses for not doing so.

Keywords: Digital, education, literacy, childhood, storytelling

INTRODUCTION

To effectively employ the ubiquitous modern technology, one must possess creativity and, at times, depend on high cognitive abilities and imaginative thinking. Therefore, it is clear that people may benefit from these scientific and technological advances and use them in a positive way in many areas (UNCTAD, 2021). From the beginning, teachers were excited to use technology and other ways to talk to each other to help students learn. As a result, the emphasis shifted to audio, then to visual, and then to audio-visual techniques, which eventually emerged as a separate field of study. After that, modern technical terms started to be used in the teaching process (Tena et al., 2020). Recent research by Kim and Lee (2017) and Nair and Yunus (2021) indicates that digital stories have become a significant modern methodology, attracting considerable interest due to their educational and technological benefits that have improved learning outcomes. As a result, many students' study skills have improved, and a lot of research has been able to learn more about and look into the idea of digital storytelling (Chan et al., 2017). Digital narratives improve the way basic teaching situations are presented by adding music, visuals, and movement. This makes the subject come to life and makes it easier to share information than in a traditional setting (Mirza, 2020).

Going to kindergarten every day gives kids a lot of different experiences, but geography is the most important because it teaches them to be very observant of their surroundings, including the weather, types of trees, street layouts, geographical features, businesses, services, and roads. As a result, kids start to read and write things that are similar to what they have seen before. They are not still; they move around, play with things, have fun, and talk about their surroundings. It goes beyond the limits of signs, symbols, and pictures that convey certain meanings to people. Bilal and Güler, 2021. In this context, this study investigates the implementation, utilization, and effectiveness of digital education in improving the reading skills of early childhood education pupils in Nigeria.

Objectives of the Study

The aim of the study is to investigate the effectiveness of Digital education through storytelling on children's literacy development in Nigeria. The specific objectives of the study are to:

i. Evaluate teachers' experiences with the use of digital teaching tools in Nigerian schools.
ii. Examining the opportunities with regards to digital education on young ECE students' literacy abilities in Nigerian classrooms by teachers.
iii. Explore challenges in relation to the effects of digital education system on young ECE students' literacy abilities in Nigerian classrooms

METHODS

The study's methodology entailed the collection and examination of pre-existing data through qualitative content analysis. Utilizing qualitative content analysis, the study can provide a more nuanced understanding derived from themes and patterns identified in the literature, while also accessing other scholarly perspectives on the subjects under investigation.

Conceptual Clarifications

Concept of Digital Education

Digital narratives mix text, pictures, audio recordings, music, and video with more traditional ways of telling stories to make compelling educational tools (Robin, 2016). Digital stories, like traditional stories, have a main theme and generally show a certain point of view. Digital narratives have different parts, such as pacing, musical intensity, emotional depth, thought-provoking questions, sound effects, and economy. (Çetin, 2021). There are three basic categories of literature: didactic, historical, and personal narratives. These types of writing cover a wide range of subjects and levels of education. Making digital stories is a very effective way to teach that could change how students learn in the classroom (Alonso et al., 2013).

Digital stories are easy to move around since they are made and shared utilizing digital tools and methods. As a result, kids can see what their classmates are doing, and teachers can keep track of how each student is doing their work and what they end up with. Digital storytelling products offer students various opportunities to examine identity and the significance of their personal experiences, transcending the constraints of conventional classroom assignments (Alonso et al., 2013). Digital storytelling, like conventional storytelling, is all about telling a tale about a specific topic or main idea (Robin, 2016). Students usually talk about, do research, write screenplays, and make a story that grabs their attention during this process. There are several digital multimedia tools that can help in digital storytelling (Bower, 2015). Digital storytelling uses a variety of media to share information about a certain topic. These include text, images, music, video, and voice narration that has been captured digitally. Digital storytelling is a very useful technical tool for schools since it combines studied, created, analyzed, and integrated visual pictures with written text (Cherry, 2017).

Lantz et al. (2020) stated that digital storytelling is an instructional strategy that puts the needs and interests of 21st-century students first. Consequently, it is considered an educational technology and a tool for literacy acquisition. Numerous academic publications underscore its role in establishing a robust basis for 21st-century literacy, including media, information, global, digital, and visual literacy (Çetin, 2021).

Literature Review

Literacy Education in Early Childhood Education

Digital education such as digital storytelling is sometimes used to describe the process of making a multimodal story (including photographs, video, sound effects, music, or text) using digital resources. Digital stories were originally meant for self-expression (Hartley & McWilliam, 2009); however, it is increasingly necessary to demonstrate their role in teaching and learning. The purpose of preschool is to help the child grow and learn in all areas. Kids learn how to make things by using different kinds of media and by moving around in imaginative ways while they are young. In a society that is becoming more computerized, ICT-supported language learning programs (for both first and second languages), ICT-supported math programs, and computer literacy programs are all significant parts of education. Conversely, knowledge acquired in It is essential to facilitate the acquisition of fundamental skills through early childhood programs that promote the effective and efficient use of these skills in daily life. Digital technologies offer an additional medium for the expression of creativity and knowledge acquisition (Mikeli c Preradovic, Unic, & Boras, 2014).

Farrell et al. (2022) conducted research indicating that children have an inherent ability to communicate and establish a system of self-knowledge and self-expression, facilitating their understanding of their environment. Language learning and the capacity to develop systems for self-expression and knowledge are essential for the advancement of written, visual, and sign languages (Peterson & Friedrich, 2021). Important literacy activities for young children could include telling stories, listening to stories, reading together from storybooks, and playing with language in an unstructured way. According to Farrell et al. (2022), early literacy is the knowledge, abilities, and attitudes that kids learn in their early years and use as the basis for their future success in speaking and writing, understanding, and expressing themselves. Teachers make smart choices in real time about how to help kids improve their reading and language abilities as they are teaching them. For teachers to help their pupils with literacy, they need to know a lot about the professional skills they have (Williamson et al., 2023).

Recent studies reveal that phonological awareness, letter-sound knowledge, and rapid automated naming are critical cognitive prerequisites for developing reading proficiency in alphabetic languages (Hjetland et al., 2017). The early literacy components are crucial for the cultivation of proficient word decoding in children and establish the foundation for their overall reading achievement, marked by proficiency in reading comprehension (Hjetland et al., 2017). The advancement of early literacy encompasses various fundamental ideas, including:

Phonological awareness is the ability to recognize and manage the distinct phonemes and syllables that make up spoken English words (Whitehurst and Lonigan, 1998, as quoted in Genica et al., 2024). Some examples of tasks that can be used to test it are rhyme matching (finding a word that rhymes with "cat" from the choices "hat," "bar," and "can"), syllable blending (explaining what happens when you combine "can" and "dy"), syllable deletion (saying "candy" without /dee/), phoneme isolation (saying the first sound in "hat"), and phoneme deletion (saying "hat" without /h/). The phonological awareness of children is the basis for successfully mapping graphene to phonemes (Hulme et al., 2002 cited in Genica et al., 2024).

Letter-sound knowledge is the understanding that phonemes, which are the smallest units of sounds in spoken words, match up with graphemes, which are the letters in written words (Whitehurst and Lonigan, 1998 as quoted in Genica et al., 2024). Kids who understand letter-sound correspondences can figure out new phrases on their own, one letter at a time, and show that they have learned to connect letters or abstract shapes with their sounds (Hulme & Snowling, 2013).

Rapid Automated Naming (RAN) is the capacity to quickly and correctly name well-known images, colors, characters, or numbers (Hulme & Snowling, 2013). The method of word recognition is similar to how we pull "names" out of long-term memory as phonetic codes (Vanden Bempt et al., 2021).

Print awareness is regarded as essential for the development of reading skills, encompassing the three previously described components (National Early Literacy Panel (NELP), 2008; Piasta et al., 2012). In the lack of reading proficiency, it focuses on children's comprehension of written language and its mechanics (Whitehurst and Lonigan, 1998). Children's print awareness in English includes knowing what print

means, being able to tell the difference between print and images, knowing the right order to read a book's pages, and knowing how to read from top to bottom and left to right (Genica et al., 2024). Print awareness is the basis for comprehending letter-sound correlations (Genica et al., 2024).

It is widely accepted that the three aforementioned elements are the essential components for the advancement of word decoding in youngsters. Each of these components plays a distinct and crucial impact in children's overall reading achievement (Dilnot et al., 2017; Hjetland et al., 2017). As stated earlier, the three key parts are important because they show how the child's brain is developing. These three factors are the most important parts of early childhood education training since they are so important for children's early literacy and later reading skills.

Effect of Digital Education systems on the Literacy Development of Children

Previous studies have demonstrated a strong and positive association between digital education and development. This positive effect on academic performance has been documented across various research fields. The literature encompasses areas such as social studies, science, foreign languages, and physics education (Kırıkçı, Ciğerci, & Arıkan, 2020; Kotluk & Kocakaya, 2017). Stories help people learn better by linking what they learn in class to what they do every day (Harris, 2007). Wu and Yang's (2008) study shows that having digital stories in the classroom can help students stay motivated to learn, which in turn can help them do better in school. Digital storytelling fosters constructivist learning and enhances cognitive processes by directing students toward research (Robin, 2016). With this method, students shape and express what they learn based on their own experiences.

Kimura's (2012) study looked at how well digital storytelling helped 35 nursing students from Japan improve their oral reading fluency. Kimura's (2012) study used the preview feature of picture narrative 3 from the Nursing textbook. The study shows that the participants learned how to read deeply, picture the story in their minds, and explain what they understood about the context. These were skills that Japanese students didn't have before.

This research by Salkhord, Gorjian, and Pazhakh (2013) investigates the influence of digital narratives on the reading comprehension of Iranian students who have undergone online education. The objective of this study was to assess the influence of digital stories on the reading comprehension abilities of Iranian young learners during online training. The research concept was implemented using an experimental approach, especially a pre-and-post-test framework. Sixty people, 18 men and 42 women, were randomly put into three groups: internet-based, paper-based, and conventional-based (the control group). The latter two groups got the same 10 digital articles in physical form as part of their treatment. The report posed two essential research questions: To what extent does online instruction of digital narratives enhance the reading comprehension of Iranian young learners of English as a Foreign Language (EFL)? What is the extent of difference in students' reading comprehension abilities across traditional, paper-based, and internet-based instructional technologies? The study's results indicate that the internet-based training of digital stories significantly enhanced the reading comprehension of novice EFL learners. Additionally, research has shown that integrating pre- and post-reading exercises can enhance learners' reading comprehension even more.

A study conducted by Garba (2014) investigates the impact of visual representations on gender when teaching reading fluency abilities to primary three students in Sokoto city. The objective of the study was to examine if the use of images in classroom instruction of reading fluency abilities may impact the academic performance of the participants, regardless of their gender. The research was initiated by a study carried out in the United States that employed Functional Magnetic Resonance Imaging (fMRI) to investigate the variations in brain functions between genders. The photos demonstrate that males exhibited heightened activity only in their left hemisphere during a listening exercise, but females displayed comparable activation in both their right and left hemispheres. The visual representations were same for both boys and girls who participated in the reading exercises. According to the research findings, there is no statistically significant difference between males and females in the experimental group. Thus, the study determines that visuals are suitable for teaching reading fluency abilities to primary three children, especially within the specific research domain.

Abdul-Kader and Eissa (2016) assert that storytelling and learning are intrinsically linked, as the process of presenting a narrative infuses it with meaning, hence encouraging the learner to engage in critical thinking with the knowledge gained. Additionally, a continuing evaluation process records the learner's cognitive development. As a result, storytelling is being used more and more in schools (Balaman, 2017) since it teaches students about history, culture, ethics, and social values. Consequently, a growing number of educational institutions are using digital storytelling, which integrates traditional storytelling techniques with diverse digital multimedia components, including audio, video, and graphics (O'Byrne et al., 2018). Storytelling has a big impact on bringing people together in a community and between countries by making a link between them and the school environment (Bandi-Rao and Sepp, 2014). Consequently, digital storytelling aids children in acquiring knowledge and information to enrich their experiences (Özpinar et al. 2017). Its two main parts, suspense and appeal, let kids learn the facts and grow their own ideas (Balaman 2017).

Studies have demonstrated that storytelling and reading aloud to young children are effective pedagogical methods that significantly improve language acquisition, enhance reading comprehension, facilitate educational understanding, clarify scientific concepts, and augment spoken language proficiency (Hu et al., 2020). Telling stories helps people from different cultures talk to each other, helps kids grow morally and socially, helps them comprehend and appreciate their surroundings, gets them ready for school, and helps them learn how to communicate well.

Over time, the art of storytelling has changed and grown, taking on a lively and modern role in many different places and situations. O'Byrne et al. (2018) contend that the emergence of novel digital technologies is reshaping the dynamics of storytelling and creating new opportunities for collaborative approaches. Ohler (2013) lists a computer, a video camera, and a sound recorder as digital tools used in the creative process of digital storytelling.

The rising use of digital storytelling methods can be linked to the fact that technology makes things cheaper, easier to use, and more interactive. As new technologies become more affordable and widely available, they have changed into a reliable way to learn (Ohler, 2013). Digital storytelling is utilized in various educational contexts, from early childhood education to higher education (Zomer & Kay, 2014). Furthermore, certain research has yielded qualitative data indicating that technology improves encoding, visual memory, creativity, and fine motor skills (Zomer & Kay, 2014).

Digital storytelling enhances students' learning by enabling them to organize and articulate their ideas and information in a unique and meaningful way. When teachers and students talk about stories, kids may get ideas for writing their own stories based on their own lives, points of view, and creativity. Digital stories give people a lot of different ways to express themselves. Teachers use digital storytelling as a way to get students' attention and make them more open to new ideas (O'Byrne et al., 2018).

Moreover, instructors can gain enhanced insights into children's learning through digital storytelling. Moreover, it has proven to be an effective tool for motivating educators to converse with their younger students and to convey knowledge while enhancing their understanding of the facts and lessons embedded in the narrative (Kocaman-Karoglu, 2015).

Teachers' Views on Digital Education Systems in Early Childhood Education

Teacher education is an important and undeniable part of helping the next generation learn how to use technology and feel good about it (Otterborn et al., 2019). Consequently, it is imperative for early childhood educators to exhibit confidence and proficiency in cultivating the digital competencies of young children (Murcia and Cross, 2022). To effectively predict pre-school teachers' decisions and behaviors regarding technology use, it is crucial to take into account their attitudes (Mertala, 2019). There are several things that could change how pre-service early childhood teachers feel about and judge the use of digital technology in their classrooms. Empirical evidence demonstrates that attitudes significantly influence the use of digital technology among pre-service teachers (Luo et al., 2021). Vidal-Hall et al. (2020) have delineated a definitive correlation between the attitudes of pre-service teachers towards digital media and their evaluation and application of such media as educational instruments in early childhood environments. Additionally, a direct correlation exists between positive teacher attitudes and

the level of proficiency in technology integration (Xie et al., 2019). Another aspect that affects educational performance is the pre-service teachers' view of how well digital technology can be used in teaching and learning. Prior studies, such those conducted by Alkhayat et al. (2020) and Xie et al. (2019), have demonstrated that pre-service teachers specializing in early childhood education are anticipated to integrate digital technology into their future classrooms. This may be attributed to the perceived intrinsic value of such technology in attaining educational objectives and enhancing learning outcomes. Furthermore, the preschool instructors' decision to incorporate digital technology into their forthcoming sessions was influenced by their view of these tools as being integrable.

There has been a significant rise in the use of digital storytelling in education in the last few years (Wu et al., 2020). Due to advances in technology, digital storytelling may now be done with a number of digital tools, such as Storyboard, Storyline, and PowToon. Digital storytelling is the art of putting together a story using spoken words and different types of multimedia, such as graphics, text, photographs, sound, music, and animation. The parts are shown digitally and can be accessed and played on digital computers (Wisnumurti et al., 2021). Digital storytelling has many benefits over traditional storytelling (Kurniawan, 2021). Lim et al. (2022) and Purnama (2021) assert that the characteristics of digital storytelling multimedia can augment students' learning outcomes, elevate their motivation, strengthen their commitment and involvement in the learning process, cultivate their interest in learning, and improve their digital literacy. Gürsoy's (2021) research shown that the utilization of digital storytelling positively impacted the 21st-century competencies of pre-service teachers. Furthermore, the research by Anilan et al. (2018) indicated that pre-service teachers highlighted the benefits of integrating digital storytelling into their pedagogical methods and acknowledged its prospective advantages for their professional trajectories. Despite the recent rise in the popularity of digital storytelling as an educational tool (Özkaya, 2022), teachers need to be properly trained to create and use digital storytelling in their lessons (Bugis, 2018). Teacher education programs must effectively equip pre-service teachers for their impending careers (Al-Abdullatif et al., 2022). To effectively include digital storytelling into teacher preparation programs, it is essential to meticulously evaluate the perspectives, attitudes, and needs of pre-service teachers (Shinas and Wen, 2022; Belda-Medina, 2022).

Obstacles Impeding the Integration of Technology in Early Childhood Education in Nigeria

Digital storytelling has many benefits for teaching and learning, but it is still not widely used in early childhood education. Additionally, there is strong evidence that this type of teaching is good for younger kids (Blackwell et al., 2014). In fact, a large number of parents and teachers do not like the idea of young children using electronics. It has been shown that some modern technology, such TVs, cell phones, and tablets, can be bad for kids (Blackwell et al., 2014). Parents and teachers are also worried about the morally dubious effects of ICT, how it doesn't take linguistic and cultural needs into account, and how it is more important than other social needs (Hopkins et al., 2013).

Many groups, such as governments and medical associations, want to limit the amount of time kids and teens spend in front of screens, either completely or partially (Gottschalk, 2016). The American Association of Paediatrics (Ponti et al., 2017), the Canadian Paediatric Society (Hill et al., 2016), the Australian Government's Department of Health (2014), and New Zealand's Ministry of Health (2017) have all set a daily limit of one hour for children under the age of five to watch high-quality programming. Additionally, the German Federal Ministry of Health has set a daily screen time limit of 30 minutes for kids in this age group (Pfeifer & Rütten, 2017).

There are two further problems that make it harder to use ICT in schools: the different infrastructure for technology use in schools and the fact that Human Resources isn't ready to help with the adoption of ICT in schools. The differences in how easy it is for people in different developing and industrialized countries to get to information and communication technology resources are very interesting (Khan et al., 2012). The Indonesia Ministry of Communication & Information Technology (2018) says that about 80,000 of the country's 280,000 schools, which include elementary schools (SD), junior high schools (SMP), and high schools (SMA), do not have Internet connection. The Minister said that early childhood education

would not be looked at because the goal was to connect primary and secondary education. In Indonesia, kids don't have to go to preschool.

One problem with employing technology in education is that teachers don't know enough about it and aren't good at using it. Studies conducted worldwide indicate that a considerable percentage of educators and pupils in developing nations lack the essential digital competences to utilize these tools effectively. This lack of resources limits their ability to make a difference, could hurt student learning, and makes educational inequalities worse, especially in underdeveloped countries (Rahiem, 2021)

CONCLUSION

In conclusion, the study is appropriate and addresses a significant educational deficiency in Nigeria, a developing nation with an educational system that is still in the process of significant advancement. Integrating digital education, along with all of its positive consequences as shown in the study, will greatly improve Nigeria's early childhood education system. such other countries around the world, Nigeria needs to overcome the education gap by using best practices in education, such digital storytelling, which has a good influence on both students and teachers. The study shows that students learn quickly and easily because the mechanism makes teaching more relevant and accessible to them. It also takes away a lot of the stress that comes with traditional methods of teaching students how to read and write and how to talk to people every day.

RECOMMENDATIONS

The study recommends that the Federal Ministry of Education Nigeria to swiftly formulate rules that will guarantee the integration of digital storytelling as an educational tool in schools nationwide. This will assist make sure that all schools have the tools and skills they need to educate with digital storytelling, even if there are no good reasons not to do so.

The study also recommends that government and private sector support for education should now focus on giving smart technologies to schools that don't have the resources to do it on their own. This measure will help fix the problem of not having enough money to use digital storytelling as a teaching tool. The Nigerian federal government, private sector programs, and non-governmental groups that focus on education in Nigeria must all support this effort to bring early childhood care education back to life in Nigeria.

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