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THE IMPACT OF DIGITAL TECHNOLOGY ON JUNIOR SECONDARY SCHOOL STUDENT'S CREATIVITY IN CALABAR MUNICIPALITY, CROSS RIVER STATE

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Abstract

Technology in our contemporary time is an indispensable scientific tool for educational, industrial and socio-economic transformation, its relevance cut-across all facet of human endeavors. This paper is centered on the impact of digital technology on children creativity, specifically, the study sought to investigate the effects of digital technology on children creativity in Calabar Municipality, Cross River State. A total of 250 junior secondary school students were collected for the study from five secondary schools using stratified sampling technique, structure questionnaire and digital technology assessment test in art were the instruments used for data collection, the data collected were analyzed using simple percentage, the findings revealed that there is a strong correlation between digital technology and children creativity, 68% to 73% of the respondents Agreed that digital technology has a significant influence on their creativity, the assessment test also revealed that over 69% of the respondents artistic creativity was influenced by their individual knowledge and level of access and exposure to digital technology information. In conclusion, the paper posits that the positive impact of digital technology on children creativity is germane but however, they is need to manage and create a balance on the accessibility and application of digital technology among children.

Key words: Digital technology, creativity, children education.

1.0 Introduction

Technology plays a significant role in almost all facets of human endeavors, it relevance cut across the educational sectors, medical, engineering, telecommunication, industrial sectors, agricultural, entertainment and sport sector, among others. . However, the term technology is as old as man, because human from inception had always deploy a technique, method or approach to making life better and work easier.

Over the years, they had been a lot of technological evolution in all aspect of human and industrial activity. According to Berlin (2014) digital technology is a branch of technology which has experience a paradigm shift as a result of scientific research and discovery. Furthermore, digital revolution is an unstoppable force sweeping across every facet of society, including the education sector. As part of this movement, EduTech has made its way into classrooms, changing the dynamic and contributing to a fulfilling learning process. For children today, often thought of as digital natives, these tools have brought many benefits to the learning experience, including enhancing creativity amongst students.

According to Kampylis and Berki (2014, p. 6): 'Creative thinking is defined as the thinking that enables students to apply their imagination to generating ideas, questions, and hypotheses, experimenting with alternatives and to evaluating their own and their peers' ideas, final products and processes. 'Creativity encompasses innovation: flexible thought, exploration of ideas, divergent thinking. Digital learning tools allow children to engage and interact with content, forcing students to harness their creativity to overcome challenges, create content and personalize their own learning experience. Research shows that both students and teachers value having technology-based creativity-fostering approaches across the curriculum—new digital tools provide this platform.

Digital technologies of numerous kinds make modern lifestyles more comfortable for us all. But for young children born into the digital age such devices are merely a feature of their native environment. And as so many technologies start to converge, so the flexibility of their application continues to grow. A contemporary Smartphone is a good example: This device was originally designed to facilitate mobile telecommunication but now comes (as standard) equipped with a powerful camera, the ability to capture video footage and a whole lot more. Whilst it is broadly accepted that digital technology offers a powerful and flexible means of enhancing creative learning, as with any other educational resource it can only perform this task when skillfully used to drive and support best early years practice. Barnaby & Burghart (2017) posited that digital technology has profoundly influenced various aspects of children's lives, including their creativity. While some argue that it can stifle creativity by promoting passive consumption, others believe it enhances creative expression through new and diverse mediums. Harnessing technology tools to instill creativity should lead to positive outcomes amongst students, as creativity leads to more innovative and critical thinking. All of these skills give students the best chance for their future careers. Given that we live in a more technology-driven economy, the next generation must be taught to think more dynamically and creatively.

However, in consonance with growth and development in digital technology, to what extent has digital technology influence children creativity, what are the effects of digital technology on children and how can a balance be created to curb the negative effect. It is on the above premise that this paper sought to examine the effects of digital technology on children creativity with it focus on children in junior secondary schools in Calabar Municipality.

2.0 MULTIMEDIA LEARNING THEORY

This study is anchored on multiple media learning theory, this theory was propounded by Mayer, R.E. in 2003, and it describes how the designers of instructional messages, systems and learning environments can optimize learning. The principle and heuristic of multimedia learning theory have application in traditional and online environments, with young and adult learners in nursery, primary, secondary schools, higher institutions, military, corporate organization, government and informal learning environments. This diversity of application is based on the foundational premise that all learners can independently process auditory and visual information, and have limited working memory resources, and require cognitive resources to process new information and to learn (Chesky, 2001).

3.0 OVERVIEW OF TECHNOLOGY

The term technology has been defined by different scholars based of the level scientific discovery and it applicability in solving human problem. Inyang- Abia (2004) Technology involves the study, mastery, practice and systematic application of scientific knowledge to practical tasks in order to create wealth, improve human capacity, reduce labour, prolong life and improve Human general welfare. He outlined the following as the major characteristics of technology:

I. Applicable

ii. Culture- related

iii. Practicable

iv. Problem-solving

v. Complex

Vi. Scientific

Vii. Syetmatic.

Enya. (2021) Define technology as the systematic and constructive application of knowledge in solving human health, industrial and economic problems. Technology is problem solving, innovative, creative, systematic, and applicable and result oriented.

4.0 CONCEPT OF DIGITAL TECHNOLOGY

Digital technology refer to tools, systems and devices that can generate, create, store or process data. The data processing and logic capabilities of digital technologies are enabled through micro processes that are programmed to perform various functions, they are devices such as personal computers and tablets, tools such as cameras, calculators and digital toys, systems such as software and apps, augmented and virtual reality, and less tangible forms of technology such as the Internet. Digital technologies are electronic systems and resources that help us learn, communicate and

play .Examples of digital technologies include:

Computers

Smartphones

Smart TVs

Online games

Video on demand websites

Traffic lights and pedestrian crossings

Automatic doors

5.0 CREATIVITY

Creativity is defined as the tendency to generate or recognize ideas, alternatives, or possibilities that may be useful in solving problems, communicating with others, and entertaining ourselves and others. In order to be creative, you need to be able to view things in new ways or from a different perspective. Among other things, you need to be able to generate new possibilities or new alternatives. Tests of creativity measure not only the number of alternatives that people can generate but the uniqueness of those alternatives. the ability to generate alternatives or to see things uniquely does not occur by change; it is linked to other, more fundamental qualities of thinking, such as flexibility, tolerance of ambiguity or unpredictability, and the enjoyment of things heretofore unknown. It encompasses divergent thinking, exploration of ideas, innovation, original and flexible thought (Barnaby & Burghart , 2017).

Robert Sternberg (2003), for example, believes that children's creative thinking must be imaginative, novel and produce outcomes which have value. But whilst it is easy to demonstrate children are imaginative, many would not accept that children in their early age are capable of producing original ideas, nor would they necessarily agree these youngsters could generate ideas of particular value. However, considering this from the perspective of the individual, Sternberg argues that (for a child to be creative) it is only necessary to show the notion is new for that individual – which is why he tends to use the term 'novelty' rather than originality .

Educationalists once considered the arts to be the natural home of creativity, and it remains true that pursuits such as painting and drawing, craftwork, dance, drama and music all demand and promote creative thinking. Nevertheless, it is now accepted the modern world defines creativity much more broadly, which clearly has implications for creativity within the curriculum. In the field of science, for example, creativity drives effective problem-solving as possible theories and solutions are voiced long before trial-and-error testing and verification begins.

6.0 EFFECT OF DIGITAL TECHNOLOGY ON CHILDREN CREATIVITY

The importance of digital technology in children creativity cannot be over-emphasized, however, studies has shown that, in spite of the positive impact of technology it still has it negative effect:

6.1 Positive impact of technology positive impacts of technology on creativity:

i. Access to Creative Tools

Technology provides children with access to a wide range of tools and platforms that can enhance their creative abilities. Digital

drawing tablets, music composition software, and video editing programs allow children to create art, music, and videos with a level of sophistication that was previously unattainable without formal training and expensive equipment (Dillon, 2020). These tools can inspire children to experiment with new forms of expression and develop their skills in innovative ways.

ii. Educational Apps and Games

Educational apps and games can foster creativity by encouraging problem-solving, critical thinking, and experimentation. For instance, games like Minecraft and Roblox provide virtual environments where children can build and design complex structures, fostering spatial awareness and engineering skills (Granic, Lobel, & Engels, 2014). These platforms often include collaborative elements, allowing children to work together on projects, which can further enhance their creative development.

iii. Exposure to Diverse Perspectives

The internet offers children exposure to a vast array of cultures, ideas, and art forms from around the world. This exposure can broaden their horizons and inspire new creative pursuits. By exploring different artistic styles, music genres, and cultural practices, children can develop a richer understanding of the world and incorporate diverse influences into their own creative works (Livingstone & Smith, 2014).

iv. Access to Information

Digital technology provides children with access to a vast array of information and resources, which can inspire creativity and innovation.

vi. Collaboration

Online platforms enable children to collaborate on creative projects with peers from around the world, broadening their perspectives and enhancing their creative output.

Vii. Interactive Learning

Educational games and interactive learning modules can stimulate creative thinking and problem-solving skills.

6.2 Negative impact of technology:

i. Over-reliance on Technology

While technology can enhance creativity, there is a risk that children may become overly reliant on digital tools, potentially stifling their ability to think creatively without technological assistance. This dependence can lead to a reduction in traditional forms of play and hands-on creative activities, such as drawing, building with physical blocks, or crafting (Cordes & Miller, 2000). It is crucial for children to balance screen time with activities that encourage tactile and kinesthetic creativity.

ii. Distraction and Reduced Focus

The omnipresence of digital devices can also lead to increased distraction and reduced focus, which can hinder creative processes that require sustained attention and deep thinking. Constant notifications, social media, and an abundance of entertainment options can fragment children's attention spans, making it difficult for them to engage deeply with creative tasks (Uhls et al., 2014).

iii. Passive Consumption

Excessive screen time and passive consumption of digital content can limit the time children spend on imaginative play and

physical activities, which are crucial for creative development.

iv. Overstimulation

The constant influx of digital stimuli can overwhelm children and hinder their ability to focus and engage deeply in creative processes.

vi. Reduced Physical Interaction

The reliance on digital technology can reduce opportunities for hands-on, tactile experiences that are important for developing creativity, especially in younger children.

In conclusion, digital technology has a multifaceted impact on children's creativity. It offers unprecedented opportunities for creative expression and learning, but also poses challenges that need to be managed to ensure a balanced development of children's creative potential.

7.0 DIGITAL TECHNOLOGY AND CHILDREN'S CREATIVITY IN CALABAR MUNICIPALITY COUNCIL, CROSS RIVER STATE

Calabar Municipality is a key local government area (LGA) located in Cross River State, Nigeria. It encompasses a significant portion of Calabar, the state capital. The municipality is known for its rich history, cultural heritage, and as a major tourist destination in Nigeria. It is famous for its vibrant annual Carnival Calabar, often referred to as Africa's biggest street party, which draws visitors from across the globe .The area is also home to several historic sites, including the Calabar Museum, the old slave trade buildings, and the Mary Slessor House. The Cross River State Government House is situated within Calabar Municipality, making it an administrative hub as well .Economically, the region benefits from tourism, commerce, and some industrial activities, although it faces challenges typical of urban areas in Nigeria, such as infrastructure development and population growth. The municipality is also known for its educational institutions, including the University of Calabar, which plays a significant role in the local economy and culture.

The advent of digital technology has significantly impacted children's creativity, particularly in Calabar Municipal Council, Cross River State. As digital devices become more accessible, children in this region are increasingly engaging with various forms of technology, which in turn influences their creative development. Digital technology offers a wide range of tools that can stimulate children's creativity. In Calabar, educational apps, digital art software, and interactive games are becoming integral parts of learning and play. These tools provide children with the opportunity to explore new ideas, experiment with different forms of expression, and develop problem-solving skills. For instance, the use of tablets and computers in schools within the municipal council has introduced students to digital drawing programs and storytelling applications, thereby fostering both visual and narrative creativity (Ezugwu, 2021).Moreover, digital platforms like YouTube and educational websites have expanded the horizons of children in Calabar by exposing them to diverse content from around the world. This exposure is crucial in a region where traditional educational resources may be limited. By accessing online tutorials and creative content, children are not only learning new skills but also finding inspiration to create

their own digital art, music, and stories (Okon, 2020).

However, the integration of digital technology into children's lives in Calabar is not without challenges. There is a growing concern that excessive screen time may lead to a decline in physical play, which is essential for holistic creative development. Studies have shown that while digital tools can enhance creativity, they can also lead to passive consumption of content rather than active creation if not properly managed (Essien, 2022). This highlights the need for a balanced approach in integrating digital technology into children's routines.

8.0 METHODOLOGY

This study adopted a quantitative approach, Survey research design was used, and this enabled the researcher to used structure questionnaire and conduct digital technology assessment in art as the primary instrument of data collection. Stratified sampling technique was used to collect a sample of 250 junior secondary students from five secondary schools in Calabar Municipality. The reliability and validity of the instrument were assessed using Cronbach alpha test and retest method and content evaluation techniques; the data collected were presented in tabular form using frequency and simple percentage analysis method.

Table 1 Analysis of sampled schools used for the study

S/N	Names of Shools	Samples
1	Margaret Ekpo Sec. Sch. Ibb.	50
2	Hope Waddle Sec. Sch. Diam.	50
3	Govt. Sec. Sch. Nyaghasan.	50
4	Comm. Tech. Col. MM highway	50
5	Army Day Sec. Sch. Eburutu Barr.	50
	Total	250

Source; Field survey, April, 2024.

8.1 DATA PRESENTATION / DISCUSSION OF FINDINGS:

8.1.1Data Presentation.

Data collected through the research instrument is presented in a tabular form using simple percentage.

Options

YES

NO

Table 2. Respondents responses to questionnaire item (1) Do you know what is digital technology?

Options	No. of respondents	Percentage (%)
YES	185	74
NO	65	26
Total	250	100

Source: Field survey, April, 2024.

Table 3. Respondents responses to questionnaire item (2) Has digital technology influence your artistic knowledge and creativity.

Options	No. of respondents	Percentage
YES	175	70
NO	75	30
Total	250	100

Source : Field survey, April, 2024.

Table 4. Respondents responses to questionnaire item (3) Do you know how to use computer and smart phone to create graphics designs like posters and business cards ?

Options	No. of respondents	Percentage
YES	165	66
NO	85	34
Total	250	100

Source: Field survey, April, 2024.

Table 5. Respondents responses to questionnaire item (4) Has playing online computer games harness your creative ability?

Options	No. of respondents	Percentage
YES	171	68.4
NO	79	31.6
Total	250	100

Source: Field survey, April, 2024.

9.0 DISCUSSION OF FINDINGS

The study revealed that the children in Calabar have a prior knowledge of what digital technology is, 185 respondents representing 74 % option was YES while 65 respondents representing 26% option was NO. This connotes that respondents have a knowledge of digital technology and it applicability. It was also affirmed that digital technology has a significant influence on children artistic knowledge and creativity, the respondents response shows that 175 respondents representing 70% option was YES while 75 respondents representing 30% option was NO, The study revealed that large number of children can use computer and smart phones to create graphics design, like posters and business cards, 165 respondents representing 66% option was YES, while 85 children representing 34% option was NO .The results also affirmed that playing online computer games has harness children creative abilities, 171 respondents representing 68.4% option was YES, while 79 respondents representing 31.6% option was NO. In nutshell, digital technology has a significant positive impact on children creativity, though it has some negative effect when the children access is not properly guided.

10.0 CONCLUSION

The effects of digital technology on children's creativity is multifaceted, it has both significant benefits and negative effect. Digital technology has given children access to advanced creative tools, educational apps, and diverse perspectives, digital technology has immensely enhance children's creative prowess . Never the less, it is germane to be careful of the potential downsides, such as over-reliance, distraction, and a focus on quantity over quality. Creating a balance between digital and traditional creative activities and guiding children in the thoughtful use of digital technology will promote a rich and well-rounded creative development among children in junior secondary schools in Cross River State.

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