Journal of Education and Learning (EduLearn)
Vol. 20, No. 2, May 2026, pp. 720~728
ISSN: 2089-9823, DOI: 10.11591/edulearn.v20i2.24300

Excessive exposure to digital media: the formative years and children response to schooling environment

James Urien[1], Silas Courage Enoja[2], Toyin Odofin[2], Sunday Obro[3]
[1]Department of Psychology, Faculty of the Social Sciences, Delta State University, Abraka, Nigeria
[2]Department of Guidance and Counselling, Faculty of Education, Delta State University, Abraka, Nigeria
[3]Department of Social Science Education, Faculty of Education, Delta State University, Abraka, Nigeria

Article Info

Article history:

Received Dec 27, 2024
Revised May 10, 2025
Accepted Jul 17, 2025

Keywords:

Children response
Digital media
Digital media usage
Formative years
Schooling environment

ABSTRACT

This study investigated the correlation between excessive exposure to digital media in the formative years and how children respond to the schooling environment in Nigeria. This study employed the correlational research design. The study sample involved 150 primary school pupils. The instrument for the study "digital media usage, types of digital media, and response" was used for data collection. The research questions were answered with Pearson product moment correlation, while hypotheses were tested with linear regression. The study revealed a statistically significant negative correlation between digital media use and how children respond to the schooling environment in Nigeria, as well as a positive relationship between the type of digital media use and how children respond to the schooling environment in Nigeria. Founded on the findings, the study recommended that parents should encourage a healthy mix of activities. Limit screen time, designate media-free zones, and promote activities like reading, outdoor play, and face-to-face socializing; schools should integrate technology strategically to enhance classroom learning. Explore educational apps, games, and online resources suitable to different learning styles. The government should consider developing age-appropriate guidelines for healthy digital media utilization in partnership with educators, parents, and health professionals.

Corresponding Author:

Sunday Obro
Department of Social Science Education, Faculty of Education, Delta State University
Abraka, Nigeria
Email: sobro@delsu.edu.ng

1. INTRODUCTION

Today's children are deeply entwined with digital media and are introduced to online content at progressively younger ages. While educational apps and interactive games present substantial learning opportunities, concerns linger about their potential to detract from essential developmental activities, like imaginative play/performance and face-to-face social interaction. The blurred line between leisure and screen use prompts critical questions about the impact on children's attention spans, emotional regulation, and sleep health. According to Livingstone and Blum-Ross [1], these tools, designed for connection, can paradoxically lead to feelings of isolation when virtual interactions replace physical socialization.

The allure of meticulously curated online portrayals adds another dimension to the challenge. With its polished and selective presentation of users' lives, social media can significantly impact a child's self-esteem. Constant comparisons foster a sense of inadequacy and amplify social anxiety as young minds struggle to align with an often-unrealistic digital reality. Karim *et al.* [2], argue that these pressures contribute to a child's emotional vulnerability, mainly as they try to measure up to the idealized lives they see online. The

demand to maintain an online persona further exacerbates these issues, creating a potential schism between a child's authentic self and digital representation. Twenge and Campbell [3] highlight that this persistent pressure can disrupt self-perception and emotional growth. These intertwined factors shape a complex narrative, calling for careful consideration of how digital media integration affects young lives and their psychological resilience.

Early childhood development (ECD), according to Rideout [4], refers to the crucial phase from birth to age 8, marked by fast advancements in cognitive, social, emotional, and physical areas. An important factor in encouraging and enabling this growth in Nigeria is the educational setting. The Federal Ministry of Education prioritizes a comprehensive approach to education, specifically emphasizing academic excellence and cultivating individuals with diverse skills and qualities. Simanjuntak *et al.* [5] stressed establishing a dynamic and nurturing learning environment that encourages critical thinking, problem-solving abilities, and positive social relationships.

However, obstacles remain within the Nigerian schooling system; while striving to meet the needs of its diverse student population, it still faces significant hurdles, including overcrowded classrooms and insufficient resources, which complicate the delivery of individualized attention [6]. Traditional pedagogies, rooted in rote learning and teacher-centered methods, frequently fall short in meeting the demands of pupils with diverse learning styles, particularly in a system already struggling with limited capacity [7]. Understanding the delicate balance between ECD and the educational context in Nigeria is paramount to fostering the development of children and ensuring their future success [8]. According to Adewusi *et al*. [8] technology has immense potential to enhance ECD in Nigeria by offering interactive learning experiences that cater to different learning styles, especially in resource-scarce environments. Yet, the key lies in integrating digital media with traditional learning methods [9]. Schools must intentionally leverage technology to boost educational outcomes while preserving vital face-to-face interaction and promoting critical thinking skills [10]. In this way, a balanced academic approach can emerge that acknowledges technology's transformative power while safeguarding early childhood education's core principles [9].

From birth to age 8, the brain undergoes rapid development, producing over one million new synaptic connections per second, which form the foundation for cognitive, emotional, and social development [11]. As highlighted by Jiang and Li [11], this phase often referred to as a "window of opportunity" for brain development due to the brain's remarkable plasticity. Children's experiences during this critical window can profoundly shape the quality and organization of their brain networks, influencing their future ability to learn, regulate emotions, and engage socially [12]. Positive experiences such as nurturing relationships, play-based learning, and engaging educational opportunities create powerful neural connections that foster lifelong cognitive and emotional growth [2]. Conversely, negative experiences like neglect or chronic stress can disrupt brain development, leading to long-term repercussions for a child's emotional well-being and cognitive abilities. This underscores the importance of cultivating an environment that supports healthy brain development during these early years [12].

In the digital age, children can enhance their learning through educational apps, online courses, and interactive content [13]. These digital tools can spark curiosity, encourage creativity, and make learning enjoyable [12]. However, over-reliance on screens can interfere with real-world interactions, prevents emotional intelligence and social growth from reaching its full potential and even contributing to self-esteem issues. Moreover, children may be exposed to harmful content or online dangers, underscoring the need for careful moderation [13]. Striking a balance between digital media and traditional childhood experiences is crucial. While digital tools can be powerful learning aids, they should not ever take the place of important in-person conversations or impede the progress of core social skills [10]. By combining digital media with hands-on, play-based activities, children can acquire a wide range of skills, all while cultivating a healthy and well-rounded digital lifestyle [2].

Nigeria is witnessing a massive increase in digital media consumption, particularly among children. Research by the Nigerian Communications Commission (NCC) in 2021 indicated that youngsters spend an average of 10 hours daily using digital gadgets, including phones, tablets, and computers. This excessive screen usage raises questions about the potential benefits and pitfalls for this youthful generation. The widespread availability of mobile phones and the popularity of mobile internet make digital media accessible and adaptable to children's everyday activities. There is a preference for video content, including educational resources, entertaining videos, and user-generated content on sites like YouTube. Social media use is also increasing, with children engaging with friends and relatives online. While educational applications and online courses can boost learning and accommodate varied learning styles, excessive screen time can lead to addiction and harmful effects on social development.

Several studies like Muppalla *et al.* [14], Maurer and Taylor [15], Suggate and Martzog [16], Bansal *et al.* [17], and Babusabgari and Balakrishna [18] have supported the report of negative correlation exist between excessive exposure to digital media in the formative years, while other researchers such as Liu *et al.* [19], Karani *et al*. [20], Oswald *et al.* [21], and Kerai *et al.* [22], reported positive correlation between excessive exposure to digital media in the formative years. These reports indicates that research on excessive

exposure to digital media in the formative years is inconclusive. This study highlights the contradictions in research findings and the necessity to provide empirical literature on the influence of excessive exposure to digital media in the formative years, and the deficiencies in the existing literature. This will address existing gaps in literature.

This article analyzes the relationship between digital media consumption and children's academic achievement in Nigeria. With increased digital media consumption, particularly among young people, examining how this trend influences their educational experiences is vital. While digital media offers potential benefits, concerns regarding excessive screen time arise.

Research questions:

- Does the amount of time Nigerian children spend on digital media platforms correlate with how children respond to the schooling environment in Nigeria?
- How does the type of digital media content Nigerian children access influence their response to the schooling environment in Nigeria?

Hypotheses:

- H01: there is no significant association between the amount of time Nigerian children spend on digital media platforms and how children respond to the schooling environment in Nigeria.
- H02: there is no significant association between the type of digital media content Nigerian children access and their response to the schooling environment in Nigeria.

2. LITERATURE REVIEW

2.1. Excessive digital usage

George *et al.* [23] underline the growing worry regarding the impact of excessive screen steal time on children's attention span. Digital media, particularly social media platforms and video material, are designed to be fast-paced and visually exciting, leading to fragmented viewing experiences and challenges with selective attention. Eboh and Ekedama [24] revealed that increased screen use can lead to difficulty focusing on particular tasks while disregarding distractions. This can represent a considerable issue in the Nigerian classroom, as teachings often require prolonged focus and concentration. Children battling with concentration difficulties owing to excessive screen time may find it harder to keep up with the pace of instruction, resulting in frustration and potentially hurting their academic success.

A study that was published in the Journal of Youth and Adolescence demonstrated that children's social development and interpersonal skills could be negatively affected by excessive screen usage. Muppalla *et al.* [14] observed that face-to-face contact is critical for fostering social abilities in children, such as nonverbal communication, emotion reading, and empathy. However, excessive screen usage can replace these in-person encounters with virtual alternatives, leading to difficulty interpreting and responding correctly to nonverbal signs. Social growth entails dispute resolution, teamwork, and negotiating complex social settings. Online games may increase teamwork but lack the complexity and nuance of real-world interactions. Edougha and Dike [25] stated that the Nigerian environment, with a heavy emphasis on community and family relationships, might potentially jeopardize this cultural cornerstone, reducing a child's capability to connect and engage with their community meaningfully.

2.2. Digital transition in Nigeria

Anxieties regarding the effects of screen time on children's health and sleep patterns has increased in Nigeria due to the country's fast digital transformation. Digital gadgets' blue light reduces melatonin production, which is a hormone needed to normalise when one sleep and wake up, as highlighted by Alam *et al.* [26]. Nagata *et al*. [27] have established a clear correlation between increased screen usage before bed, trouble falling asleep, and lower sleep quality. Insufficient sleep can manifest in different ways, including daily exhaustion, anger, difficulties concentrating, and reduced immunological function. A study identified an association between increased screen time and indicators of despair and anxiety of adolescents. Mah and Larkings [28] claimed that the implications of interrupted sleep extend beyond the individual child, as they can have a ripple impact on family relations and overall household harmony.

Nigeria's digital revolution has undeniably transformed education, opening up new possibilities and presenting significant challenges. The widespread adoption of digital media, particularly social media platforms and video games, has created a sharp contrast between the fast-paced gratification of digital spaces and the slower, more deliberate demands of traditional classroom settings. This contrast has raised questions about how excessive screen usage affects student motivation and engagement. According to Alete [29], the fast-paced nature of digital media can diminish students' attention to academic activities, making the structured classroom environment seem less appealing.

2.3. Excessive digital usage and academic performance

Przybylski *et al.* [30] highlight a key concern: excessive screen time is linked to a decline in intrinsic motivation. Their research shows that when students spend too much time on digital platforms, they exhibit less interest in academics, face challenges completing assignments, and disengage during classroom discussions. This disengagement is a symptom of digital overuse and a significant barrier to academic success. In a similar vein, Pérez-Juárez *et al.* [31] argue that digital content's fragmented and transient nature disrupts students' ability to focus for extended periods, ultimately impairing their concentration and capacity to engage meaningfully in classroom activities. Kuss and Griffiths [32] also discuss how the dopamine-driven rewards system in digital media, including social media and gaming, exacerbates attention difficulties. Their findings suggest that students often find it challenging to shift from the rapid pace of digital entertainment to the slower tempo of academic tasks. This shift is critical, as sustained focus is essential for academic performance. Additionally, a study by Paulich *et al.* [33] points to the potential cognitive and emotional consequences of excessive screen time, with students showing a marked decline in their emotional regulation, further hampering their academic success.

Pérez-Juárez *et al.* [31] emphasize the potential shortcomings of Nigeria's conventional education system, which often depends on rote memorization and a teacher-centered approach. This technique can be particularly prone to the negatives of excessive screen time, which can hamper the development of critical thinking abilities and autonomous learning. The teacher-centered approach in Nigerian classrooms may compound the impact of attention challenges caused by excessive screen use, leading to dissatisfaction, disengagement, and reduced academic achievement. However, it is vital to understand the potential benefits of digital media in the Nigerian classroom, including educational apps, online resources, and carefully curated social media platforms, to deliver interactive and interesting learning experiences. Striking a balance between the potential hazards of excessive screen time and establishing a more dynamic learning environment might help Nigerian educators utilize the power of digital media to create a more engaging and productive educational experience for their pupils.

3. METHOD

3.1. Research design

This study adopted the correlational survey research design. A correlation survey research design is appropriate when a researcher is interested in investigating the degree of connection or correlation between/among variables. This design is suitable for the study on excessive exposure to digital media in the formative years. The aim of the study using or adopting this design is to ascertain the correlation between excessive exposure to digital media in the formative years and how children respond to the schooling environment.

3.2. Sample and sampling technique

The study's population comprised 5,373 primary school pupils. The sample for this study consisted of 150 primary school pupils selected from Delta Central Senatorial District government/public schools. The study instrument used for data gathering was the questionnaire. The instrument is titled "excessive exposure to digital media in the formative years questionnaire (EEDMFYQ)". The instrument is divided into two parts: A-B. Section A sought biographic data from the respondents/students, and section B has 18 items, and responses were scored using a 4-point rating scale ranging from strongly agree (4), agree (3), disagree (2), and strongly disagree (1). The research questions were answered using the Pearson product moment correlation and coefficient of determination. On the other hand, the hypotheses were tested using Linear regressions at a 0.05 level of significance.

4. RESULTS

The correlation between excessive exposure to digital media in the formative years and how children respond to the schooling environment is explored in this study. The results and findings of this research are presented and explained in this section along with a detailed discussion. The data gathered and analyzed were presented in Tables 1 to 4 for the suitability of the readers.

- RQ 1: does the amount of time Nigerian children spend on digital media platforms correlate with how children respond to the schooling environment in Nigeria?

Table 1 displays an r-value of -0.72, indicating a significant negative relationship between the amount of time Nigerian children spend on digital media platforms and their responses to the schooling environment in Nigeria. The coefficient of determination (r^2) was 0.52, and the amount of contribution of Nigerian children's time on digital media platforms and how children respond to the schooling environment in Nigeria was 52%. The results showed a negative relationship between the time Nigerian children spend on digital media platforms and how children respond to the Nigerian schooling environment.

Table 1. Pearson product moment correlation of time children spends on digital media platforms and their response to the schooling environment

Variables	N	r	r^2	r^2%	Decision
Digital media platforms Response	150	-0.72	0.52	52	Negative relationship

- RQ 2: how does the type of digital media content Nigerian children access influence their response to the schooling environment in Nigeria?

Table 2 shows the r-value of 0.58 as how the type of digital media content Nigerian children access influences how children respond to the schooling environment in Nigeria. The coefficient of determination (r^2) was 0.33, and the contribution of the type of digital media content Nigerian children access and how children respond to the schooling environment in Nigeria was 33%. The result showed a positive relationship between the type of digital media content Nigerian children access and how they influence their response to the schooling environment in Nigeria.

Table 2. Pearson product moment correlation of type of digital media content children access and their response to the schooling environment

Variables	N	r	r^2	r^2%	Decision
Digital media platforms Response	150	0.58	0.33	33	Positive relationship

- H01: there is no significant relationship between the amount of time Nigerian children spend on digital media platforms and how children respond to the schooling environment in Nigeria.

Table 3 presents a regression analysis examining the relationship between the amount of time Nigerian children spend on digital media platforms and how children respond to the Nigerian schooling environment. The model's regression analysis shows a statistically significant negative relationship between the amount of time Nigerian children spend on digital media platforms and how children respond to the schooling environment in Nigeria. This is indicated by a significant F-statistic (F=163.561) with a p-value of 0.001, which is less than the conventional alpha level of 0.05, suggesting the relationship between the amount of time Nigerian children spend on digital media platforms and how children respond to the schooling environment is a statistically significant negative relationship.

Table 3. Regression of time children spend on digital media and their response to the schooling environment

Model	Sum of square	df	Mean square	F	Sig.
Regression	2459.670	1	2459.670	163.561	.000
Residual	2225.663	148	15.038		
Total	4685.333	149			

- H02: there is no significant relationship between the type of digital media content Nigerian children access and their response to the schooling environment in Nigeria.

Table 4 presents a regression analysis examining the relationship between the type of digital media content Nigerian children access and how children respond to the Nigerian schooling environment. The model's regression analysis shows a significant relationship between the type of digital media content Nigerian children access and how children respond to the schooling environment in Nigeria. This is indicated by a significant F-statistic (F=73.827) with a p-value of 0.000, which is less than the conventional alpha level of 0.05, suggesting that the relationship between the type of digital media content Nigerian children access influences how children respond to the schooling environment is statistically significant.

Table 4. Regression analysis of the relationship between the type of digital media content Nigerian children access and their response to the schooling environment in Nigeria

Model	Sum of square	df	Mean square	F	Sig.
Regression	1559.348	1	1559.348	73.827	.000
Residual	3125.985	148	21.122		
Total	4685.333	149			

5. DISCUSSION

The result of H01 revealed a statistically significant negative correlation between these two factors. This indicates that as the amount of time Nigerian children spend on digital media platforms increases, the way children respond to the schooling environment in Nigeria decreases. The amount of time Nigerian children spend on digital media platforms would, to a great extent, determine the degree of the relationship, whether positive or negative. This finding is based on the fact that students who use digital media excessively may experience a loss of time, disconnection, and a decline in their emotional well-being. It can divert attention away from focused study periods and assignment completion, causing pupils to feel ill-prepared and disinterested. This finding is in line with Muppalla *et al.* [14] and Misan-Ruppee *et al*. [10], who observed that face-to-face contact is critical for fostering social abilities in children, such as nonverbal communication, emotion reading, and empathy. However, excessive screen usage can replace these in-person encounters with virtual alternatives, leading to difficulty interpreting and responding correctly to nonverbal signs. Online negativity, such as cyberbullying and social pressures, can have a detrimental effect on emotional well-being. In addition, engaging in social media or gaming activities late at night can disturb sleep patterns, impairing cognitive performance and motivation, ultimately leading to reduced school involvement. The finding also aligned with Alam *et al.* [26] who emphasized that the blue light emitted from digital devices decreases the production of melatonin, a hormone necessary for regulating sleep-wake cycles. Nagata *et al*. [27] and Mah and Larkings [28] also established a clear correlation between increased screen usage before bed, trouble falling asleep, and lower sleep quality. Insufficient sleep can manifest in different ways, including daily exhaustion, anger, difficulties concentrating, and reduced immunological function. The rapid and continuous flow of content on digital platforms may also impede the ability to maintain long-term focus, resulting in difficulty concentrating and actively participating in classroom activities.

The result of H02 indicated a significant relationship between the type of digital media content Nigerian children access and how it influences their response to the schooling environment in Nigeria. This finding results from utilizing educational apps, documentaries, and YouTube channels, which can enhance curiosity and increase the appeal of learning, fostering a positive school atmosphere. However, it is essential to note that these resources can also contribute to negative attitudes, present unrealistic depictions, and encourage social comparison, which may result in disinterest. This finding agrees with Ebegha and Ogheneakoke [6] and Eboh and Ekedama [24], who posit that schools can deliberately use technology to increase learning without compromising face-to-face connection or critical thinking abilities. By cultivating a comprehensive awareness of the connection between digital media, the finding is also in agreement with the Jiang and Li [11], which argues that this age of rapid brain development is commonly referred to as a "window of opportunity" due to the brain's amazing degree of adaptability. Positive interactions, engaging situations, and rich learning experiences can establish robust brain networks, creating a strong basis for future success [34]. Edougha and Dike [25] stated that the Nigerian environment, with a heavy emphasis on community and family relationships, might potentially jeopardize this cultural cornerstone, reducing a child's ability to connect and engage with their community meaningfully. While games can potentially cultivate problem-solving abilities and strategic thinking, excessive gaming or highly stimulating games can impede concentration on slower-paced classroom tasks. Balancing these factors is essential for effective learning and engagement in education.

6. CONCLUSION

Based on the findings of this study, it was concluded that excessive exposure to digital media in the formative years is statistically significant negative linked to how children respond to the schooling environment in Nigeria. Based on the conclusion, it was recommended that parents should encourage a healthy mix of activities. Limit screen time, designate media-free zones, and promote activities like reading, outdoor play, and face-to-face socializing; schools should integrate technology strategically to enhance classroom learning. Explore educational apps, games, and online resources that cater to different learning styles and subjects, and the government should consider developing age-appropriate guidelines for healthy digital media use in collaboration with educators, parents, and health professionals.

ACKNOWLEDGEMENTS

The authors wish to thank the students, teachers, and principals of the schools used for this study. Also, the authors appreciate all those whose works were used for this study.

FUNDING INFORMATION

No funding received or involved for the study.

AUTHOR CONTRIBUTIONS STATEMENT

This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
James Urien	✓			✓		✓	✓		✓	✓				
Silas Courage Enoja	✓	✓				✓		✓	✓				✓	
Toyin Odofin		✓	✓	✓	✓	✓		✓	✓					
Sunday Obro		✓	✓		✓					✓		✓		

C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
Va : **Va**lidation
Fo : **Fo**rmal analysis
I : **I**nvestigation
R : **R**esources
D : **D**ata Curation
O : Writing - **O**riginal Draft
E : Writing - Review & **E**diting
Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

CONFLICT OF INTEREST STATEMENT

Authors state no conflict of interest.

INFORMED CONSENT

We have obtained informed consent from all individuals included in this study.

ETHICAL APPROVAL

Ethical principles were adhered to during the data collection process. The research related to human use has been complied with all the relevant national regulations and institutional policies in accordance with the tenets of the Helsinki Declaration and has been approved by the authors' institutional review board or equivalent committee.

DATA AVAILABILITY

The data that support the findings of this study are available on request from the corresponding author, [SO].

REFERENCES

[1] S. Livingstone and A. Blum-Ross, *Parenting for a digital future: how hopes and fears about technology shape children's lives*. 1st ed. Oxford, U.K.: Oxford University Press, 2020.
[2] F. Karim, A. Oyewande, L. F. Abdalla, R. C. Ehsanullah, and S. Khan, "Social media use and its connection to mental health: a systematic review," *Cureus*, vol. 16, no. 6, p. e8627, Jun. 2020, doi: 10.7759/cureus.8627.
[3] J. M. Twenge and W. K. Campbell, *The narcissism epidemic: living in the age of entitlement*. New York, NY: Atria Books, 2019.
[4] V. Rideout, "Measuring time spent with media: the common sense census of media use by US 8- to 18-year-olds," *Journal of Children and Media*, vol. 10, no. 1, pp. 138–144, Jan. 2016, doi: 10.1080/17482798.2016.1129808.
[5] M. P. Simanjuntak, J. Hutahaean, N. Marpaung, and D. Ramadhani, "Effectiveness of problem-based learning combined with computer simulation on students' problem-solving and creative skills," *International Journal of Instruction*, vol. 14, no. 3, pp. 519–534, 2021, doi: 10.29333/iji.2021.14330a.
[6] S. E. Ebegha and E. C. Ogheneakoke, "Effects of collaborative and traditional learning strategy on academic performance of social studies students in upper basic schools in Delta State," *International Journal of Social Science and Education Research Studies*, vol. 3, no. 12, pp. 2392–2397, Dec. 2023, doi: 10.55677/ijssers/v03i12y2023-13.
[7] J. U. Iheakanwa, S. Obro, and W. P. Akpochafo, "Reading ability, study habits and students' academic performance in social studies," *Library Philosophy and Practice*, vol. 2021, pp. 1–21, 2021.
[8] O. E. Adewusi, N. M. Al Hamad, I. J. Adeleke, U. C. Nwankwo, and G. C. Nwokocha, "Technology integration in early childhood education: a review of practices in Nigeria and the UK," *Education & Learning in Developing Nations*, vol. 2, no. 1, pp. 10–16, Oct. 2023, doi: 10.26480/eldn.01.2024.10.16.
[9] A. A. Akinrotimi and P. K. Olowe, "Challenges in implementation of early childhood education in Nigeria," *The Way Forward*, vol. 7, no. 7, pp. 33–38, 2016.
[10] R. O. Misan-Ruppee, S. Obro, and W. P. Akpochafo, "Innovative instructional approach: the effect of information and communication technology-assisted instruction on civic education students' performance," *Arab Gulf Journal of Scientific Research*, vol. 42, no. 3, pp. 744–756, Oct. 2024, doi: 10.1108/AGJSR-02-2023-0047.
[11] Y. Jiang, and Y. Li, "The role of nutrition and gut microbiome in childhood brain development and behavior," *Frontiers in Nutrition,* vol. 12, no. 1590172, pp. 1-27, Jun. 2025, doi: 10.3389/fnut.2025.1590172.

[12] E. Budiarti and S. Y. Adar, "Impact of digital media on social-emotional development in early childhood: a case study at TK Kartika XX-46 Kendari," *Golden Age: Jurnal Ilmiah Tumbuh Kembang Anak Usia Dini*, vol. 8, no. 2, pp. 89–98, 2023, doi: 10.14421/jga.2023.82-04.
[13] O. B. Agem, "Exploring the use of information and communication technology in advancing the goals of education for all among adults in Nigeria," *European Journal of Social Sciences Education and Research*, vol. 2, no. 1, pp. 147–152, Dec. 2014, doi: 10.26417/ejser.v2i1.p148-153.
[14] S. K. Muppalla, S. Vuppalapati, A. R. Pulliahgaru, and H. Sreenivasulu, "Effects of excessive screen time on child development: an updated review and strategies for management," *Cureus*, vol. 15, no. 6, p. e40608, Jun. 2023, doi: 10.7759/cureus.40608.
[15] B. T. Maurer and L. C. Taylor, "The effect of digital media on children in their formative years," *JAAPA: official journal of the American Academy of Physician Assistants*, vol. 33, no. 5, pp. 46–51, 2020, doi: 10.1097/01.JAA.0000660180.96512.70.
[16] S. P. Suggate and P. Martzog, "Children's sensorimotor development in relation to screen-media usage: a two-year longitudinal study," *Journal of Applied Developmental Psychology*, vol. 74, p. 101279, 2021, doi: 10.1016/j.appdev.2021.101279.
[17] P. Bansal, S. Sengar, S. S. Manjhi, and A. R. KU, "Prevalence of digital media exposure and excessive screen time in school going children: a cross-sectional study," *Journal of Cardiovascular Disease Research*, vol. 14, no. 4, pp. 1398–1407, 2023.
[18] S. Babusabgari and B. B. Balakrishna, "Exposure and use of digital media among under-five children," *International Journal of Contemporary Pediatrics*, vol. 8, no. 9, pp. 1539–1546, 2021, doi: 10.18203/2349-3291.ijcp20213315.
[19] J. Liu, S. Riesch, J. Tien, T. Lipman, J. Pinto-Martin, and A. O'Sullivan, "Screen media overuse and associated physical, cognitive, and emotional/behavioral outcomes in children and adolescents: an integrative review," *Journal of Pediatric Health Care*, vol. 36, no. 2, pp. 99–109, 2022, doi: 10.1016/j.pedhc.2021.06.003.
[20] N. F. Karani, J. Sher, and M. Mophosho, "The influence of screen time on children's language development: a scoping review," *South Africa Journal of Community Disorder*, vol. 69, no. 1, pp. 1–7, 2022, doi: 10.4102/sajcd.v69i1.825.
[21] T. K. Oswald, A. R. Rumbold, S. G. Kedzior, and V. M. Moore, "Psychological impacts of 'screen time' and 'green time' for children and adolescents: a systematic scoping review," *PLoS ONE*, vol. 15, no. 9, p. e0237725, 2020, doi: 10.1371/journal.pone.0237725.
[22] S. Kerai, A. Almas, M. Guhn, B. Forer, and E. Oberle, "Screen time and developmental health: results from an early childhood study in Canada," *BMC Public Health*, vol. 22, no. 1, p. 310, 2022, doi: 10.1186/s12889-022-12701-3.
[23] A. S. George, A. S. H. George, T. Baskar, and A. Shahul, "Screens steal time: how excessive screen use impacts the lives of young people," *Partners Universal Innovative Research Publication (PUIRP)*, vol. 1, no. 2, pp. 157–177, 2023.
[24] C. E. Eboh and K. Ekedama, "The impact of social media syndrome on safety practices and academic performance of undergraduate students at Ignatius Ajuru University of Education, Nigeria," *European Journal of Education Studies*, vol. 11, no. 2, pp. 24–40, 2024, doi: 10.46827/ejes.v11i2.5185.
[25] E. D. Edougha and I. D. Dike, "Enhancing the dimensions of family social climate for the well-being of the Nigerian child," *The Educational Psychologist*, vol. 13, no. 1, pp. 491–503, 2020.
[26] M. Alam, K. Abbas, Y. Sharf, and S. Khan, "Impacts of blue light exposure from electronic devices on circadian rhythm and sleep disruption in adolescent and young adult students," *Chronobiology in Medicine*, vol. 6, no. 1, pp. 10–14, Mar. 2024, doi: 10.33069/cim.2024.0004.
[27] J. M. Nagata *et al.*, "Bedtime screen use behaviors and sleep outcomes: findings from the adolescent brain cognitive development (ABCD) study," *Sleep Health*, vol. 9, no. 4, pp. 497–502, 2023, doi: 10.1016/j.sleh.2023.02.005.
[28] B. L. Mah and K. Larkings, "Association between poor sleep for infants to two years and subsequent mental health symptoms: a systematic review and meta-analysis," *Journal of Child Health Care*, vol. 26, no. 3, pp. 461–478, 2022, doi: 10.1177/13674935211015085.
[29] J. A. Alete, "Managing digital divide for goals attainment in basic education schools in Nigeria," *Journal of Education and Society*, vol. 12, no. 2, pp. 2739–2749, 2022.
[30] A. K. Przybylski, A. Orben, and N. Weinstein, "How much is too much? Examining the relationship between digital screen engagement and psychosocial functioning in a confirmatory cohort study," *Journal of the American Academy of Child & Adolescent Psychiatry*, vol. 59, no. 9, pp. 1080–1088, 2020, doi: 10.1016/j.jaac.2019.06.017.
[31] M. A. Pérez-Juárez, D. González-Ortega, and J. M. Aguiar-Pérez, "Digital distractions from the point of view of higher education students," *Sustainability*, vol. 15, no. 7, p. 6044, 2023, doi: 10.3390/su15076044.
[32] D. J. Kuss and M. D. Griffiths, "Social networking sites and addiction: ten lessons learned," *International Journal of Environmental Research and Public Health*, vol. 18, no. 5, 2021, doi: 10.3390/ijerph14030311.
[33] K. N. Paulich, J. M. Ross, J. M. Lessem, and J. K. Hewitt, "Screen time and early adolescent mental health, academic, and social outcomes in 9-and 10-year old children: utilizing the adolescent brain cognitive development (ABCD) study," *PLoS ONE*, vol. 16, no. 9, p. e0256591, 2021, doi: 10.1371/journal.pone.0256591.
[34] R. O. Uwaifo, "Teachers' factors and effective teaching of social studies in the new world," *Journal of African Social Studies (JASS)*, vol. 5, no. 1, pp. 105–122, 2024.

BIOGRAPHIES OF AUTHORS

James Urien is a lecturer in the Department of Psychology, Faculty of the Social Sciences, Delta State University, Abraka, Nigeria. He has a Doctorate in Psychology from Walden University Minneapolis, USA. His research interests cover all aspects of educational psychology, legal psychology, and personality. He can be contacted at email: jourien@delsu.edu.ng.

Silas Courage Enoja is a guidance and counselling lecturer at the Institute of Education, Faculty of Education, Delta State University, Abraka, Nigeria. She received her Master's and Doctoral degrees in Guidance and Counselling from Delta State University, Abraka, Nigeria. She enjoys studying and researching and is passionate about creating sustainable, positive change for the next generation. Her research interests include childhood education, mental health issues in children and adults, family dynamics and their impact on children, disorders, environmental factors and their impact on learning and delinquency, parenting education, and innovative counselling techniques. She can be contacted at email: couragesilas@gmail.com.

Toyin Odofin is a lecturer in the Department of Guidance and Counselling, Faculty of Education, Delta State University, Abraka, Nigeria. She holds a B.Sc. (Ed.) degree in Psychology/Guidance and Counselling, Master's degree, and PhD in Educational Psychology. Her area of research interest is adolescent learning and achievement. She can be contacted at email: odofintoyin123@gmail.com.

Sunday Obro is a lecturer in the Department of Social Science Education at Delta State University, Abraka, Nigeria. He is the head of the Department of Social Science Education at Delta State University, Abraka, Nigeria. His interests include social studies, instructional strategies, educational technology, civics, and citizenship education. He can be contacted at email: sobro@delsu.edu.ng.