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INFLUENCE OF DIGITAL MEDIA EXPOSURE ON ATTENTION AND PEER INTERACTION IN NIGERIAN PRIMARY SCHOOL CHILDREN

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Abstract
This study explores the influence of digital media exposure on attention span and peer interaction among primary school pupils in Kano State, Nigeria. In recent years, children's engagement with digital devices such as smartphones, tablets, and television has increased significantly, raising concerns about its developmental implications. Using a survey design, data were collected from 80 pupils aged 6 to 11 years, across primary schools via parent-reported structured questionnaires measuring media usage, attention, and peer interaction. Descriptive statistics revealed that 78% of pupils use digital devices daily, with 65% spending over three hours per day on screens. Pearson correlation analysis indicated a significant negative relationship between digital media exposure and attention span ($r = -0.45$, $p < .05$), as well as peer interaction ($r = -0.38$, $p < .05$). These findings align with global research linking excessive screen time to diminished focus and reduced face-to-face social engagement. The study underscores the urgent need media use guidelines in schools and homes, recommending structured digital policies, parental monitoring, and teacher training on media literacy. While unregulated media use may hinder cognitive and social development, intentional use of educational content can offer developmental benefits. This research provides crucial insight for educators, parents, and policymakers seeking to balance digital media's role in children's lives.
Keywords: Digital media exposure, Attention span, Peer interaction

Introduction

The rapid rise in digital media usage among children has become an increasing concern for parents, educators, and psychologists worldwide. In today's digital age, children are exposed to a wide variety of media platforms, including smartphones, tablets, social media, television, and gaming consoles. These digital environments have become integral to children's daily routines, shaping how they learn, interact, and entertain themselves.

Digital media is defined as "content that is created, distributed, and accessed through digital electronic devices, including but not limited to videos, images, text, and interactive applications delivered via the internet, computers, and mobile devices" (Jenkins, Ito, & boyd, 2016). It encompasses formats such as social media platforms, streaming services, online games, and educational apps, all of which influence how individuals communicate, learn, and engage socially. While digital media offers valuable educational opportunities, such as access to e-learning platforms, interactive games, and video tutorials, its excessive or unsupervised use raises significant risks. Rao and Vemulakonda (2021) claim that prolonged screen time negatively affects children's sleep patterns, academic performance, emotional well-being, and cognitive and social development. They highlight concerns such as diminished attention spans, reduced capacity for deep thinking, and weakened interpersonal skills resulting from excessive digital media exposure.

Attention, for instance, is conceptualized as "a dynamic cognitive process involving selective focus on relevant stimuli and the ability to sustain and shift focus as required by environmental demands" (Gazzaley & Rosen, 2016). It includes not only maintaining focus but also flexibly controlling cognitive resources to optimize learning and task performance (Anderson, 2020).

Peer interaction is defined as "the process by which children engage in reciprocal social behaviors, including verbal and nonverbal communication, cooperation, and conflict resolution, essential for developing social competence and emotional regulation" (Rose & Asher, 2019). Such interactions provide the foundational experiences for building relationships, empathy, and social skills critical for lifelong adjustment (Chen et al., 2021).

In Nigeria, and particularly in Kano State, the accessibility and affordability of mobile technology have made digital devices more common in households with young children. As a result, screen time has risen significantly, even among children as young as two years old (NCC, 2021). While digital media can offer educational benefits when used appropriately, its excessive and unregulated use raises developmental concerns. These concerns center primarily on the potential impact of prolonged screen exposure on children's ability to maintain attention and engage in meaningful peer interactions, two fundamental aspects of cognitive and social development.

Despite increasing digital access among Nigerian children, there is a noticeable gap in research specific to how digital media exposure affects attention span and peer interaction in local cultural and educational contexts. This study aims to fill that gap

by examining the influence of digital media exposure on primary school pupils in Kano State, Nigeria.

Statement of the Problem

There has been a significant increase in digital media exposure among primary school pupils in Kano State, Nigeria, raising concerns about its potential impact on cognitive and social development. With children spending an average of 3–4 hours daily on digital devices, prolonged screen time may contribute to reduced attention spans and decreased face-to-face peer interactions. Teachers frequently report that pupils struggle to maintain focus during lessons, often becoming easily distracted or unable to complete tasks that require sustained attention. Similarly, parents have expressed concern that their children are less engaged in verbal communication and cooperative play, and more reliant on screens for stimulation.

This issue is further complicated by the lack of clear guidelines for digital media usage in homes and schools. The absence of region-specific data limits understanding of how digital media impacts children's development within Kano's unique sociocultural and educational context. Therefore, a systematic investigation is necessary to uncover the realities of digital media exposure among school-aged children and provide evidence for informed educational and parental strategies.

Objectives of the Study

1. To assess the extent of digital media exposure among primary school pupils in Kano State.
2. To examine the relationship between digital media consumption and attention span among primary school pupils in Kano State.
3. To examine the relationship between digital media consumption and peer interaction among primary school pupils in Kano State.

Research Question

1.What is the extent of digital media exposure among primary school pupils in Kano State?

Hypotheses

Research Hypothesis

H_{o1}There is a significant relationship between the extent of digital media exposure and attention span among primary school pupils in Kano State.

H_{02}There is a significant relationship between the extent of digital media exposure and peer interaction among primary school pupils in Kano State.

Literature Review

Digital media refers to digitized content that can be transmitted over the internet or computer networks and includes various components such as video content, search engines, wikis, and social platforms (Sikarwar, 2016; Eichen et al., 2021). Children's engagement with digital devices has become widespread across the globe. According to Auxier et al. (2020), television remains the most commonly used device among young children, with 88% of children engaging with it, 74% of whom are aged two or younger. Tablet use has increased to 80% among children aged 5–11, while 60% use smartphones and 44% use gaming consoles or computers.

Early exposure to digital media has been linked to various cognitive and social outcomes. Research by Hu et al. (2023) suggests that excessive screen time is associated with reduced attentional control and impaired prosocial behavior. Christakis (2020) emphasizes that early screen exposure may hinder brain development, particularly due to the limited cognitive processing capacity of young children. Attention, a fundamental cognitive process, involves selecting and maintaining focus on relevant stimuli. It is critical for learning and academic success (Rueda, Checa, & Combita, 2012), and is described by Posner and Rothbart (2018) as a regulatory system for managing cognitive resources during development.

Peer relationships are equally vital to a child's socio-emotional development. They foster essential skills such as empathy, communication, and conflict resolution (Rubin, Bukowski, & Parker, 2015). Piaget (1959) underscored the importance of peer interaction for the social construction of knowledge. However, the rise of digital communication has potentially reduced opportunities for in-person interaction, which is crucial for developing these competencies. Vanden Abeele (2018) notes that digital communication often lacks the emotional and non-verbal cues essential to nurturing healthy interpersonal relationships.

Several studies have further highlighted the attention drawbacks of excessive media exposure. For instance, Lillard and Peterson (2011) found that fast-paced television content negatively impacts executive function in children, while Gueron-Sela and Gordon-Hacker (2020) observed long-term associations between early screen use and attention challenges. Although these findings are consistent across various contexts, there remains limited empirical evidence from Northern Nigeria, particularly Kano State, where cultural, educational, and technological factors may influence how digital media affects children.

Methodology

This study employed a descriptive survey research design to examine the influence of digital media exposure on attention span and peer interaction among primary school pupils in Kano State, Nigeria. A total of 80 pupils aged 5 to 10 years were selected through simple random sampling from primary schools in Kano State. The gender distribution was approximately equal, with 41 males and 39 females. Data were collected using a structured questionnaire divided into three sections: frequency and duration of digital media usage, attention span, and peer interaction. The latter two sections were adapted from standardized child attention rating scales and measures aligned with prosocial behavior and communication, respectively. The questionnaire utilized a Likert-type scale to capture parents' perceptions of their children's behaviors and media use patterns.

Considering the young age of the participants, the questionnaires were completed by their parents and care givers, who were better positioned to provide accurate information regarding their children's digital media exposure and social interactions. A research assistant facilitated the administration of the questionnaires by distributing them during school meetings Before the main study, a pilot study was conducted involving 16 pupils' families from a similar context to assess the clarity, relevance, and appropriateness of the questionnaire items. The pilot data were used to evaluate the instrument's reliability, yielding a Cronbach's alpha coefficient of 0.78, which indicates good internal consistency. Ethical approval was obtained from relevant educational authorities. Descriptive statistics were used to analyze the distribution and patterns of digital media usage. Pearson Product-Moment Correlation was applied to test the relationship between the independent variable (digital media exposure) and the dependent variables (attention and peer interaction).

Research Question:

What is the extent of digital media exposure among primary school pupils in Kano State?

Findings revealed that a significant proportion of pupils are exposed to digital media for an average of 3 to 4 hours daily, primarily via mobile phones, tablets, and television. 78% reported using digital devices every day, while 65% spent more than 3 hours daily on media activities.

Hypothesis 1 (H_1):

There is a significant relationship between digital media exposure and attention span among primary school pupils in Kano State.

Pearson correlation analysis revealed a negative correlation ($r = -0.45$, $p < .05$), indicating that increased digital media exposure is associated with decreased

attention. 62% of pupils reported difficulties maintaining focus during class, with gaming and social media cited as major distractions.

Table 1

Relationship Between Digital Media Exposure and Attention Span

Hypothesis	Variables	Statistical Test	r	p	Decision
H_1	Digital Media Exposure & Attention Span	Pearson correlation	-0.45	< .05	Supported

Hypothesis 2 (H_2):

There is a significant relationship between digital media exposure and peer interaction among primary school pupils in Kano State.

Pearson correlation analysis showed a negative correlation ($r = -0.38$, $p < .05$), suggesting that children with high media exposure had reduced peer interaction. 59% of pupils preferred digital communication over face-to-face social interaction.

Table 2

Relationship Between Digital Media Exposure and Peer Interaction

Hypothesis	Variables	Statistical Test	r	p	Decision
H_2	Digital Media Exposure & Peer Interaction	Pearson correlation	-0.38	< .05	Supported

Discussion

The findings of this study provide critical insights into the influence of digital media exposure on attention span and peer interaction among primary school pupils in Kano State, Nigeria. The results align with the growing body of global literature suggesting that prolonged screen time may negatively impact children's cognitive and social development. Consistent with previous research (Hu et al., 2023; Christakis, 2020), the study revealed a significant negative correlation between digital media exposure and attention span ($r = -0.45$, $p < .05$). This suggests that children who spend more time using digital devices are more likely to experience difficulties in sustaining focus, particularly during classroom activities. This outcome supports claims by Lillard and Peterson (2011) that fast-paced, overstimulating media content may impair executive function and self-regulation in children. The observed attention deficits, as reported by 62% of parents, may stem from the rapid, fragmented nature of digital media which trains the brain to expect constant stimulation, thereby reducing children's capacity for sustained, goal-directed attention (Rueda, Checa, & Combita, 2012; Posner & Rothbart, 2018).

Similarly, the study found a significant negative relationship between digital media exposure and peer interaction ($r = -0.38$, $p < .05$), suggesting that children with high screen time may be less engaged in face-to-face social interactions. This supports the assertion by Vanden Abeele (2018) that digital communication lacks essential emotional and non-verbal cues, which are vital for developing interpersonal skills. Moreover, 59% of the pupils were reported to prefer digital communication over in-person interaction, which could contribute to a reduction in the development of prosocial behaviors (Rubin, Bukowski, & Parker, 2015). These findings echo Piaget's (1959) theory, which underscores the importance of direct peer interaction in fostering social learning.

Overall, these findings reinforce warnings from WHO (2020) and Christakis (2020) on managing children's media exposure and stress the role of attention (Posner & Rothbart, 2018) and peer interaction (Rubin et al., 2015) in development. In Kano State, where digital access is rising (NCC, 2021), these results emphasize the urgent need for informed media policies in schools and homes.

Conclusion

This study demonstrates that digital media exposure significantly influences attention span and peer interaction among primary school pupils in Kano State. Findings reveal that excessive screen time correlates with reduced classroom attention and diminished peer interaction and face to face social skills. However, the moderated use of educational content can enhance communication and cooperative learning. As digital devices become more integrated into children's lives, it is vital for educators, parents, and policymakers to develop guidelines that promote balanced and intentional use of media. Doing so will help mitigate negative outcomes while enhancing the developmental benefits of digital tools.

Recommendations

1. Schools should integrate structured digital media policies into their curricula, emphasizing educational over recreational use.
2. Parents should monitor and limit children's daily screen time while encouraging offline activities that promote attention and interaction.
3. Teacher training programs should include modules on managing digital distractions and promoting social engagement in classrooms.
4. Policymakers should develop awareness campaigns on the effects of unregulated digital media use and the benefits of media literacy.

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