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NEGATIVE INFLUENCE OF ICT ON ACADEMIC PERFORMANCE OF JUNIOR SECONDARY SCHOOL STUDENTS IN NNEWI NORTH LGA OF ANAMBRA STATE

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Abstract

This study investigated the negative influence of Information and Communication Technology (ICT) on the academic performance of junior secondary school students in Nnewi North Local Government Area, Anambra State, Nigeria. A descriptive survey design was adopted, involving 300 students from government-owned secondary schools using convenience and simple random sampling techniques. Data was collected through a self-structured questionnaire which is divided into two sections: one for demographic information and the other for responses. The instrument was subjected to face validation and a pre-test for clarity and accuracy. Its reliability was confirmed using the split-half method. Data were analyzed using frequency percentages, mean, and standard deviation. A decision rule was set: mean scores of 2.5 and above indicated high influence, while scores below 2.5 signified low influence. The findings highlighted several perceived negative effects of ICT on students' academic performance. These results contribute to understanding the extent of ICT's adverse impact and provide a basis for developing strategies to reduce its negative effects, ultimately supporting improved academic outcomes in the area.

Keywords: Academic Performance, Information Communication Technology (ICT), Secondary School Students

Introduction

Information and Communication Technology (ICT) has become a vital force in the modern world, revolutionizing communication, learning, governance, and commerce. ICT refers to the integration of computing and telecommunication technologies, including the internet, computers, mobile devices, and digital platforms, which facilitate information acquisition, processing, storage, and exchange (ITU, 2019; UNESCO, 2022). Its adoption has transformed key sectors such as healthcare, business, governance, and especially education, promoting efficiency, innovation, and global connectivity (Castells, 2021; Brynjolfsson & McAfee, 2023). In education, ICT plays a critical role in expanding access to learning resources, improving teaching strategies, and supporting student-centered learning in junior secondary schools, targeting students aged 12 to 15 years in particular Information and Communication Technology (ICT) is an umbrella term that includes any communication device or application, encompassing radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and

applications association with them (Enemuo & Muogbo, 2024). ICT is used to teach core subjects and engage learners through digital tools such as interactive whiteboards, educational software, and multimedia content (Federal Republic of Nigeria, 2021; UNESCO, 2019). These technologies offer personalized learning, cater to diverse learning styles, and encourage collaboration between students and teachers (Kozma, 2021.

Despite these benefits, concerns are rising over ICT's potential negative impact on students' academic performance. Academic performance, typically measured by grades, test scores, and learning outcomes, can be influenced by ICT both positively and negatively (Mangunkusumo et al., 2020; Clark et al., 2018). On the one hand, ICT enhances understanding and motivation through interactive content and immediate feedback (Dhawan, 2020) Excessive use of digital devices may lead to distractions, reduced focus, poor time management, and overreliance on quick online answers, hindering deep learning and critical thinking (Froiland & Davison, 2022; Hsin & Cigas, 2019).

Moreover, the rise of social media, online gaming, and entertainment content often diverts students' attention from academics. The digital divide also presents a challenge, as unequal access to ICT resources creates disparities in learning opportunities and outcomes (Warschauer & Matuchniak, 2020). These concerns have prompted researchers and educators to call for a balanced approach to ICT integration, maximizing its benefits while minimizing its drawbacks (Watson et al., 2019; Hermans et al., 2018). In Nigeria, several studies have explored the effects of ICT on students' academic outcomes, noting both the benefits of strategic ICT integration and the risks of unregulated use (Afolabi et al., 2019; Olatoye & Adebayo, 2019). However, limited research focuses specifically on junior secondary school students in Anambra State. Therefore, the study aims to investigate the specific negative influences of Information and Communication Technology (ICT) on the academic performance of junior secondary school students in Nnewi North LGA of Anambra State.

The integration of Information and Communication Technology (ICT) in junior secondary schools is becoming increasingly prevalent, driven by the recognition of its potential to enhance teaching and learning experiences. By incorporating ICT, junior secondary schools can adapt to the evolving technological landscape, preparing students for the digital demands of the modern world. ICT adoption offers various benefits in junior secondary education, including facilitating interactive learning, improving access to educational resources, and fostering digital literacy skills which is essential in the modern world. However, alongside these advantages, there is a growing concern regarding the negative influence of ICT on the academic performance of junior secondary

school students. Studies have indicated that excessive use of ICT devices such as smartphones, tablets, and computers can lead to distractions, reduced attention spans, procrastination, and even addiction among students. These distractions can impede students' ability to concentrate in class, engage with course material, and ultimately affect their academic performance negatively. Moreover, the prevalence of social media platforms and online entertainment further exacerbates these challenges, diverting students' attention away from the study. There is a pressing need to conduct a study to thoroughly examine the negative influence of ICT on the academic performance of junior secondary school students in Nnewi North LGA of Anambra State.

Purpose of the Study

The main purpose of this study is to examine the negative influence of Information and Communication Technology (ICT) on the academic performance of junior secondary school students in Nnewi North Local Government Area of Anambra State.

Specifically, the study seeks to:

1. Identify the ICT devices commonly used by junior secondary school students in Nnewi North Local Government Area.
2. Investigate the extent to which ICT devices negatively impacts the academic performance of junior secondary school students in Nnewi North Local Government Area.
3. Explore strategies that can be implemented to minimize the negative impact of ICT on the academic performance of junior secondary school students.

Research Questions

The following research questions guided study.

1. What are the ICT devices that are commonly used by junior secondary school students in Nnewi North Local Government Area?
2. To what extent do ICT devices negatively impact the academic performance of junior secondary school students in Nnewi North Local Government Area?
3. What strategies can be implemented to minimize the negative impact of ICT on the academic performance of junior secondary school students?

Methods

This study adopted a descriptive survey research design, which was considered appropriate for collecting data through a questionnaire from a sample of junior secondary school students in Nnewi North Local Government Area (LGA) of Anambra State. The survey design enabled the researcher to gather opinions and perceptions regarding the negative influence of ICT on students' academic performance. The target population comprised all 876 Junior Secondary School (JSS) 2

students in public secondary schools in Nnewi North LGA. Among them, 527 were female and 349 were male. A sample of 300 JSS 2 students was drawn from this population. A convenience sampling technique was used to select three public secondary schools from the 11 public secondary schools in the LGA. Thereafter, simple random sampling was employed to select 100 students from each school, making up a total sample of 300 respondents. The instrument used for data collection was a structured questionnaire titled "Negative Influence of ICT on Academic Performance", developed by the researcher based on the objectives of the study. The questionnaire consisted of 21 items and was divided into two sections: Section A collected demographic information, Section B focused on items designed to answer the research questions, using a four-point Likert scale: Very High Extent, High Extent, Very Low Extent, Low Extent. The questionnaire was validated by three experts. To determine the reliability of the instrument, Split-Half method was applied. The questionnaire was administered to a similar group of JSS 2 students in Ihiala LGA, which shared the same demographic characteristics. Guttmanan Split-Half Coefficient was computed and found to be 0.76, indicating a reliable instrument. The researcher administered the questionnaires to the students from the sampled schools with the help of research assistants, all 300 copies of the questionnaire were distributed and retrieved immediately after completion to ensure a high response rate. The data collected were presented in tables and analyzed using frequencies, percentages, mean, and standard deviation. The decision rule was based on a cut-off mean of 2.5: items with a mean score of 2.5 and above were considered high, while those below 2.5 were considered low in influence.

Results

Research Question 1: What are the ICT devices that are commonly used by junior secondary school students in Nnewi North Local Government Area?

Table 1: Frequency and percentage of the student response to ICT devices commonly used by junior secondary school students. **(N=300)**

ICT Devices	Frequency	Percentage	Remark
Smartphone	232	77.3%	Agreed
Laptop/Computer	168	56.0%	Agreed
Tablet	83	27.7%	Disagreed
Desktop Computer	152	50.7%	Agreed
E-book Reader	19	6.3%	Disagreed
Smartwatch	48	16%	Disagreed
Interactive Whiteboard	211	70.3%	Agreed
USB Flash Drive	128	42.7%	Disagreed
Digital Camera	84	28%	Disagreed
Portable Gaming Device	267	89%	Agreed

The above table shows the widespread adoption of various technologies, with smartphones being the most used device (77.3%), highlighting their central role in students' daily and academic lives. Portable gaming devices also showed a high usage rate (89%), suggesting a strong interest in gaming, which could be harnessed for educational gamification. Laptops (56%) and desktop computers (50.7%) are also commonly used, indicating access to traditional computing resources necessary for research and assignments. Interactive whiteboards, used by 70.3% of students, reflect their integration into classroom teaching for enhanced interactive learning. Conversely, devices like tablets (27.7%), e-book readers (6.3%), smartwatches (16%), digital cameras (28%), and USB flash drives (42.7%) showed lower usage. These lower rates may be due to overlapping functionality with smartphones and laptops or limited relevance to students' academic needs. Overall, the findings show that smartphones, computers, gaming devices, and interactive whiteboards dominate ICT use, offering significant opportunities for integration into teaching strategies to improve learning outcomes.

Research Question 2: To what extent does ICT devices negatively impact the academic performance of junior secondary school students in Nnewi North Local Government Area?

Table 2: Mean and Standard Deviation Distribution of the Respondents Response to the extent to which ICT devices negatively impacts the academic performance of junior secondary school students

Negative Impact of ICT Devices	Mean	SD	Remark
ICT devices like games often distract me from studying	2.71	0.910	Agreed
Excessive screen time affects my concentration when I am studying	2.79	1.348	Agreed
Dependence on online resources for learning	2.45	1.672	Disagreed
Addiction to ICT devices negatively impacts my academic focus	2.77	1.406	Agreed
ICT device in plagiarism	2.67	1.620	Agreed

Findings from Table 2 show that students generally perceive ICT devices as a source of distraction, with a mean score of 2.71, indicating moderate agreement and minimal variation. This suggests that many students are distracted by social media, games and other online content, which interferes with their studies. Students also agreed that excessive screen time reduces concentration during study, with a mean of 2.79, although responses varied more widely (SD = 1.348). This supports evidence linking prolonged device use to screen fatigue and reduced academic focus. Interestingly, students disagreed on whether dependence on online resources negatively impacts learning (mean = 2.45), reflecting mixed views, some find online content helpful, while others see it as a barrier to developing independent study skills. students further acknowledged that ICT addiction hampers academic focus (mean = 2.77), and agreed that these devices can encourage

plagiarism and academic dishonesty (mean = 2.67). Overall, the findings highlight key concerns related to distraction, addiction, and ethical issues, underscoring the need for guided and moderated ICT use among students.

Research Question 3: What strategies can be implemented to minimize the negative impact of ICT on the academic performance of junior secondary school students?

Table 3: Mean and Standard Deviation Distribution of the Respondents Response to strategies that can be implemented to minimize the negative impact of ICT on the academic performance of junior secondary school students

Strategies to Minimize Negative Impact	Mean	SD	Remark
Implement ICT education programs in schools	2.89	0.822	Agreed
Set limits on screen time during school hours	3.12	1.109	Agreed
Provide counseling for ICT addiction	2.55	1.246	Agreed
Emphasize critical thinking skills in ICT use	2.09	1.132	Disagreed
Encourage physical activities during breaks	2.34	1.100	Disagreed
Promote collaborative learning over individual screen time	2.22	1.456	Disagreed

The table revealed varying levels of agreement among respondents regarding the effectiveness of different strategies. The strategy of limiting screen time during school hours received the highest level of agreement, with a mean of 3.12 and a standard deviation (SD) of 1.109**,** indicating strong support with moderate variation in opinions. ICT education programs followed with a mean of 2.89 and an SD of 0.822, showing broad agreement and low variability, suggesting consensus on its importance. Counseling for ICT addiction also received agreement (mean = 2.55**,** SD = 1.246), although with a slightly higher variation in responses. On the other hand, strategies like promoting critical thinking in ICT use had a mean of 2.09andSD of 1.132**,** showing general disagreement with moderate spread. Encouraging physical activities and collaborative learning had means of 2.34 and 2.22 with SDs of 1.100 and 1.456 respectively, reflecting disagreement and wider variability in respondents' views. Overall, strategies with higher means and lower standard deviations were more widely accepted, while those with lower means and higher variability received less support.

Discussion of findings

The findings from this study reveals important insights into the negative influence of Information and Communication Technology (ICT) on the academic performance of junior secondary school students in Nnewi North Local Government Area, Anambra State. Firstly, the study identified that smartphones are the most commonly used ICT devices among students, followed closely by portable gaming devices, laptops, and interactive whiteboards. This

widespread use aligns with global patterns observed in adolescent ICT adoption, where smartphones serve as both learning tools and entertainment devices (Pew Research Center, 2022; Poushter, Bishop & Chwe, 2018). However, the high rate of gaming device usage (89%) suggests a substantial risk of distraction, as students may prioritize leisure activities over academic responsibilities.

In examining the extent of ICT's negative influence, the study found that students generally perceive these technologies as significant sources of distraction. Mean scores above the benchmark of 2.5 indicated strong agreement with the view that ICT use especially in the form of gaming, prolonged screen time, and internet access interferes with concentration and reduces academic focus. This observation corroborates findings by Twenge and Campbell (2018), who reported that excessive screen exposure is linked to reduced psychological well-being and poor academic outcomes among adolescents. Moreover, the students agreed that ICT usage encourages plagiarism, highlighting the challenge of maintaining academic integrity in a digital era (Tang & Hussin, 2023). While students acknowledged the distractions and addictive tendencies associated with ICT use, they were divided on whether reliance on online resources negatively affected their learning. This mixed perception may reflect the dual nature of ICT as both a facilitator and a potential barrier to deep learning, as noted by Froiland and Davison (2022).

To address these challenges, the study recommends several intervention strategies, including structured ICT education programs within the curriculum, limiting screen time, and offering counseling services for students displaying signs of digital dependency. These suggestions align with recent scholarly recommendations emphasizing the importance of promoting digital literacy, responsible ICT use, and the development of self-regulation skills among students (Livingstone, 2021; Aesaert et al., 2023). Overall, the study underscores the importance of a balanced and regulated approach to ICT integration in education. While technology has undeniable benefits, its unregulated use can significantly undermine academic performance. The findings call for coordinated efforts by educators, school administrators, and policymakers to guide ICT use in a way that supports learning while minimizing its adverse effects.

Conclusion

The study concluded that excessive use of ICT devices among junior secondary school students in Nnewi North LGA significantly disrupts their academic performance, primarily due to distractions and cognitive overload. It emphasizes the need for targeted interventions, such as structured ICT education and effective screen time management, to mitigate these negative effects and improve educational outcomes. The study's findings will contribute to

understanding the extent of ICT's negative influence on junior secondary school students' academic performance in Nnewi North LGA and will inform strategies to mitigate these adverse effects, thereby enhancing educational outcomes in the region.

Recommendation

Based on the findings of the study on ICT device usage and its impacts on junior secondary school students in Nnewi North Local Government Area, several recommendations can be made to mitigate the negative effects and enhance the educational benefits of ICT:

1. Ministry of Education should integrate structured ICT education into their curriculum to equip students with essential digital literacy skills. This includes teaching responsible use of ICT devices, digital citizenship, and critical thinking in evaluating online information.
2. Schools should offer counseling services specifically addressing ICT addiction and related issues. Counseling sessions can help students develop healthier technology habits, manage screen time responsibly, and cope with challenges like distractions and academic pressure exacerbated by ICT use.
3. School Management should establish guidelines for screen time during school hours and also parents during home hours, this will help students to manage their use of ICT devices more effectively. This approach aims to reduce distractions, maintain focus during study sessions, and promote a healthy balance between digital and offline activities.

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