

Social Media Usage and Students' Academic Engagement in Public Secondary Schools in Cross River State, Nigeria

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Abstract

This study investigated the influence of social media usage on students' academic engagement in public secondary schools in Cross River State, Nigeria. The study adopted a descriptive survey research design, with a population of 16,804 students across 84 public secondary schools as reported by the Cross River State Ministry of Education (2026). A sample of 600 students was selected using stratified random sampling based on school location and class level. Data were collected using a researcher-developed instrument titled Social Media Usage and Academic Engagement Questionnaire (SMAEQ), which contained 40 items measuring Twitter (X), WhatsApp, Facebook, and Instagram usage, as well as behavioral, emotional, and cognitive dimensions of academic engagement. The instrument was validated by experts and yielded a Cronbach's Alpha reliability coefficient of 0.86. A total of 578 completed questionnaires were analyzed, representing a 96.3% response rate. Data were analyzed using mean and standard deviation to answer research questions, while Analysis of Variance (ANOVA) was used to test hypotheses at the 0.05 level of significance. The findings revealed that all four social media platforms significantly influence students' academic engagement, with both positive effects such as enhanced collaboration, communication, and access to learning resources, and negative effects such as distraction and poor time management. It was concluded that social media usage plays a dual role in students' academic engagement depending on the manner of use. The study recommended structured integration, regulation, and monitoring of social media usage to optimize its academic benefits.

Keywords: *Social media usage, academic engagement, Twitter (X), WhatsApp, Facebook, Instagram, secondary school students*

Introduction

The proliferation of social media platforms has significantly transformed the communication landscape and learning behaviors of secondary school students globally. In Nigeria, the increasing accessibility of smartphones and internet connectivity has intensified students' engagement with platforms such as WhatsApp, Facebook, and Instagram, thereby influencing how they interact with academic content and peers. Academic engagement, which encompasses students' behavioral, emotional, and cognitive involvement in learning activities, is critical for

educational success. However, concerns have emerged regarding the extent to which social media usage either enhances or detracts from students' focus on academic tasks. Scholars have argued that while social media can serve as a collaborative and informational tool, its unregulated use often leads to distraction and reduced concentration on schoolwork (Junco, 2012; Kirschner & Karpinski, 2010).

In the context of public secondary schools in Cross River State, the situation appears particularly concerning due to the rapid adoption of digital technologies without corresponding regulatory or guidance frameworks. Many students reportedly spend substantial time on social media for entertainment and social interaction, often at the expense of academic engagement such as homework completion, classroom participation, and independent study. Empirical studies have indicated that excessive social media use is associated with lower academic performance, poor time management, and diminished attention span among students (Olowu & Seri, 2012; Ahn, 2011). Despite these findings, some researchers highlight the potential of social media as a pedagogical tool that can foster collaborative learning, peer support, and access to educational resources when effectively integrated into teaching practices (Tess, 2013).

Notwithstanding the dual perspectives on social media usage, there remains a persistent problem of declining academic engagement among students in public secondary schools in Cross River State, which may be linked to unmonitored and excessive use of these platforms. Teachers and school administrators continue to express concerns over students' inattentiveness, reduced participation in classroom activities, and poor study habits, all of which undermine educational outcomes. While previous studies have explored social media usage and academic performance broadly, there is a paucity of localized research focusing specifically on its influence on students' academic engagement within this region. This gap underscores the need for a focused investigation into how social media usage patterns affect students' engagement in learning activities, thereby providing empirical evidence to inform policy and practice in the educational sector (Kirschner & Karpinski, 2010; Tess, 2013).

Statement of the problem

The increasing penetration of social media among secondary school students has introduced new dynamics into the teaching–learning process, particularly in public secondary schools in Cross River State, Nigeria. While these platforms offer opportunities for communication and access to information, there is growing concern that students' frequent and often unregulated use of social media is detracting from their academic engagement. Teachers and school administrators have reported observable declines in students' attentiveness during lessons, reduced participation in classroom activities, and a general lack of commitment to academic tasks, suggesting a possible disconnect between students' digital behaviors and expected learning outcomes.

Furthermore, many students appear to prioritize social media interactions over essential academic responsibilities such as homework completion, reading, and preparation for examinations. This trend raises critical questions about students' time management, self-regulation, and motivation toward learning. Despite the potential of social media as an educational tool, its predominant use for entertainment and socialization in this context may be undermining students' behavioral, emotional, and cognitive engagement in school activities, thereby posing a threat to academic success and overall educational quality.

Although existing studies have examined the relationship between social media usage and academic performance, there remains limited empirical evidence focusing specifically on students' academic engagement within public secondary schools in Cross River State. This gap makes it

difficult for educators and policymakers to design context-specific interventions to address the emerging challenges. It is against this backdrop that this study seeks to investigate the extent to which social media usage influences students' academic engagement, with a view to providing evidence-based recommendations for improving teaching and learning outcomes in the region.

Theoretical framework

The theoretical framework for this study is anchored on the Uses and Gratifications Theory propounded by Elihu Katz, Jay Blumler, and Michael Gurevitch in 1974, and the Social Cognitive Theory developed by Albert Bandura in 1986. The Uses and Gratifications Theory assumes that individuals are active participants who consciously select media to satisfy specific needs such as information seeking, social interaction, and entertainment, while the Social Cognitive Theory posits that human behavior is shaped through the reciprocal interaction of personal, behavioral, and environmental factors. These theories emphasize purposeful media use, observational learning, and self-regulation as key determinants of behavior. In relation to the present study, they imply that students' patterns of social media usage can significantly influence their level of academic engagement, either positively by supporting learning interactions or negatively by promoting distraction and reduced academic focus.

Conceptual and empirical literature review

Empirical evidence on the influence of Twitter (X) usage on students' academic engagement has produced mixed but insightful findings. A study by Junco et al. (2011) revealed that students who were required to use Twitter for academic discussions, collaboration, and feedback demonstrated significantly higher levels of academic engagement and improved academic outcomes compared to those who did not use the platform. Similarly, Gao, Luo, and Zhang (2012) reported that Twitter enhances interactive learning by enabling real-time communication, extending classroom discussions, and encouraging concise expression of ideas among students. Supporting this, Amiruzzaman and Amiruzzaman (2022) found that the manner in which students use Twitter particularly for academic purposes plays a more critical role than the frequency of use in determining its impact on learning engagement. These findings suggest that structured and purposeful use of Twitter can foster active learning, peer interaction, and increased participation in academic activities.

However, other studies caution that unregulated use of Twitter may negatively affect students' academic engagement. Kirschner and Karpinski (2010) found that excessive use of social networking platforms, including Twitter, is associated with reduced study time and lower academic outcomes due to distraction and multitasking. Similarly, Flanigan and Babchuk (2015) argued that social media platforms can divert students' attention away from academic tasks, thereby reducing their level of cognitive and behavioral engagement in learning. Junco (2012) also observed that high levels of social media use are linked to procrastination and diminished concentration, which negatively impact students' academic involvement. Thus, while Twitter holds potential as an educational tool, its benefits largely depend on the nature and purpose of its use, as indiscriminate engagement may hinder students' academic focus.

In relation to WhatsApp usage, empirical studies indicate that the platform plays a significant role in facilitating academic engagement among students. Al-Rahmi et al. (2014) found that WhatsApp enhances collaborative learning by enabling students to share academic materials, discuss assignments, and engage in group learning activities beyond the classroom. Similarly, studies by Chai-Lee (2013) and Cain et al. (2009) highlighted that social media platforms like

WhatsApp support communication, knowledge sharing, and peer interaction, which are critical components of academic engagement. Furthermore, research has shown that WhatsApp groups created for academic purposes promote active participation, instant feedback, and continuous learning, thereby improving students' behavioral and emotional involvement in their studies.

Conversely, excessive and non-academic use of WhatsApp has been found to undermine students' academic engagement. Kuppuswamy and Narayan (2010) reported that students often use WhatsApp predominantly for entertainment and social interactions, leading to distraction and reduced time for academic activities. Similarly, Gafni et al. (2012) and Chen and Bryer (2012) noted that frequent messaging and multitasking on social media platforms can disrupt concentration and lower students' engagement in meaningful learning tasks. Junco and Cotten (2012) further emphasized that simultaneous use of social media during study time negatively affects attention span and academic productivity. Therefore, while WhatsApp has the potential to enhance academic engagement, its unregulated use may contribute to decreased focus, poor study habits, and reduced academic commitment among students.

Empirical studies on the influence of Facebook usage on students' academic engagement reveal both positive and negative outcomes depending on the nature of usage. Ellison, Steinfield, and Lampe (2007) found that Facebook can enhance students' social capital, which in turn supports collaborative learning and academic engagement through peer interaction and information sharing. Similarly, Mazman and Usluel (2010) reported that Facebook facilitates communication, resource exchange, and group collaboration, thereby improving students' behavioral and emotional engagement in learning activities. In the same vein, Aydin (2012) observed that Facebook serves as an effective educational tool when integrated into classroom activities, enabling students to participate actively in discussions and maintain continuous academic interaction beyond school hours.

However, several studies have highlighted the adverse effects of Facebook usage on students' academic engagement when it is not academically oriented. Kirschner and Karpinski (2010) found that excessive Facebook use is associated with reduced study time and lower academic performance, largely due to distraction and poor time management. Junco (2012) also reported that high frequency of Facebook use negatively correlates with students' academic engagement, particularly when it involves non-academic activities. Furthermore, Ogedebe, Emmanuel, and Musa (2012) noted that many students prioritize social interactions on Facebook over academic responsibilities, leading to decreased concentration and participation in classroom activities. These findings suggest that while Facebook has the potential to enhance engagement, its misuse can significantly hinder students' academic involvement.

With regard to Instagram usage, emerging empirical evidence indicates that the platform can influence students' academic engagement in diverse ways. Alhabash and Ma (2017) found that Instagram promotes visual learning and creative expression, which can enhance students' interest and emotional engagement in academic content. Similarly, Handayani (2016) reported that the use of Instagram in educational contexts encourages students to share academic ideas, collaborate on projects, and engage more actively with learning materials. In addition, Carpenter, Morrison, and Craft (2020) observed that Instagram can support informal learning by providing access to educational content, thereby fostering continuous engagement outside the classroom environment. Conversely, excessive use of Instagram has been linked to reduced academic engagement among students. Kuss and Griffiths (2017) argued that high levels of Instagram use can lead to addiction-like behaviors, which negatively affect students' concentration and time devoted to academic tasks. Similarly, Andreassen (2015) found that compulsive use of social media platforms, including Instagram, is associated with procrastination and decreased academic productivity. Odeh, Al-Adwan, and Al-Madadha (2020) further reported that students who spend significant time on

Instagram for entertainment purposes tend to exhibit lower levels of behavioral and cognitive engagement in their studies. Therefore, while Instagram holds potential as a tool for enhancing engagement, its unregulated use may undermine students' academic focus and overall learning outcomes.

Existing literature has largely focused on the relationship between social media usage and academic performance, with limited attention to students' academic engagement, particularly within the context of public secondary schools. Additionally, most studies have been conducted outside Cross River State or Nigeria, creating a gap in localized empirical evidence that reflects the unique socio-educational realities of the area. Therefore, this study seeks to fill these gaps by specifically examining how different social media platforms influence students' academic engagement in public secondary schools in Cross River State, Nigeria.

Purpose of the study

The main purpose of this study was to investigate the influence of social media usage on students' academic engagement in public secondary schools in Cross River State, Nigeria. Specifically, the study sought:

1. To examine the influence of Twitter (X) usage on students' academic engagement in public secondary schools.
2. To determine the influence of WhatsApp usage on students' academic engagement in public secondary schools.
3. To assess the influence of Facebook usage on students' academic engagement in public secondary schools.
4. To evaluate the influence of Instagram usage on students' academic engagement in public secondary schools.

Research questions

The following questions were raised to direct the study:

1. What is the influence of Twitter (X) usage on students' academic engagement in public secondary schools in Cross River State?
2. What is the influence of WhatsApp usage on students' academic engagement in public secondary schools in Cross River State?
3. What is the influence of Facebook usage on students' academic engagement in public secondary schools in Cross River State?
4. What is the influence of Instagram usage on students' academic engagement in public secondary schools in Cross River State?

Null hypotheses

The following hypotheses were formulated to guide the study:

1. There is no significant influence of Twitter (X) usage on students' academic engagement in public secondary schools in Cross River State.
2. There is no significant influence of WhatsApp usage on students' academic engagement in public secondary schools in Cross River State.

3. There is no significant influence of Facebook usage on students' academic engagement in public secondary schools in Cross River State.
4. There is no significant influence of Instagram usage on students' academic engagement in public secondary schools in Cross River State.

Methodology

The study adopted a descriptive survey research design, which was considered appropriate for investigating social media usage and students' academic engagement in public secondary schools in Cross River State, Nigeria. This design facilitated the systematic collection, analysis, and interpretation of data from a representative sample, thereby enabling valid generalizations about the population. The target population comprised all indigenous students enrolled in public secondary schools in Cross River State, totaling 16,804 students across 84 schools as reported by the Cross River State Ministry of Education (2026). A stratified random sampling technique was employed to select a sample of 600 students. Stratification was based on school location (urban and rural) and class level to ensure proportional representation and enhance the reliability and generalizability of the findings.

Data for the study were collected using a researcher-developed instrument titled *Social Media Usage and Academic Engagement Questionnaire (SMAEQ)*. The instrument consisted of 40 items structured to reflect the study variables, including Twitter (X), WhatsApp, Facebook, and Instagram usage, as well as dimensions of academic engagement (behavioral, emotional, and cognitive). To ensure content and construct validity, the instrument was subjected to expert review by three specialists in Educational Management, Educational Technology, and Measurement and Evaluation. Their suggestions were incorporated to improve clarity, relevance, and alignment with the objectives of the study. A pilot test was conducted using 30 students from public secondary schools outside Cross River State. The reliability of the instrument was established using Cronbach's Alpha, which yielded a coefficient of 0.86, indicating high internal consistency.

The instrument was divided into two main sections: Section A captured demographic information such as gender, age, class level, and school location, while Section B contained items on social media usage and students' academic engagement. The questionnaire was administered both physically and electronically to ensure wide coverage and accessibility among respondents. Trained research assistants facilitated the distribution and collection of the instruments across selected schools over a four-week period. Out of the 600 copies of the questionnaire distributed, 578 were properly completed and returned, representing a response rate of 96.3%.

Responses were rated using a four-point Likert scale of Strongly Agree (4), Agree (3), Disagree (2), and Strongly Disagree (1). A criterion mean of 2.50 was adopted as the decision benchmark. Mean scores equal to or above 2.50 indicated a positive influence of social media usage on students' academic engagement, while mean scores below 2.50 indicated a negative influence. Data collected were analyzed using mean and standard deviation to answer the research questions, while Analysis of Variance (ANOVA) was employed to test the null hypotheses at the 0.05 level of significance. This methodological approach ensured the generation of valid, reliable, and contextually relevant data for assessing the influence of social media usage on students' academic engagement in public secondary schools in Cross River State, Nigeria.

Results

Research question one

What is the influence of Twitter (X) usage on students' academic engagement in public secondary schools in Cross River State?

Table 1: Respondents' mean ratings and standard deviation on the influence of Twitter (X) usage on students' academic engagement in public secondary schools in Cross River State (n = 578)

S/N	Influence indicators	n	Mean	S.D.	Decision
1	Twitter (X) usage enhances students' participation in academic discussions	578	3.21	0.73	A
2	Twitter (X) provides access to educational content that supports learning	578	3.26	0.70	A
3	Use of Twitter (X) improves students' engagement with current academic trends	578	3.18	0.75	A
4	Twitter (X) usage promotes collaborative learning among students	578	3.23	0.72	A
5	Twitter (X) enhances students' motivation to participate in academic activities	578	3.15	0.76	A
6	Twitter (X) usage improves students' critical thinking through information sharing	578	3.20	0.74	A
7	Twitter (X) usage encourages interaction between students and educators	578	3.12	0.78	A
8	Frequent use of Twitter (X) may distract students from academic tasks	578	3.05	0.80	A
9	Twitter (X) usage influences students' time management in relation to studies	578	3.09	0.77	A
10	Twitter (X) enhances students' overall academic engagement	578	3.22	0.71	A
	Grand Mean Score	578	3.17	0.75	A

Source: *Fieldwork, 2026*

The results in Table 1 indicate that respondents generally agreed that Twitter (X) usage has a significant influence on students' academic engagement in public secondary schools in Cross River State. The grand mean score of 3.17, which falls within the "Agree" (A) category, suggests that the majority of students perceive Twitter (X) as playing a meaningful role in their academic engagement. Notably, higher mean ratings were observed in areas such as access to educational content ($\bar{X} = 3.26$), enhancement of overall academic engagement ($\bar{X} = 3.22$), and promotion of collaborative learning ($\bar{X} = 3.23$), indicating that Twitter (X) can support interactive and resource-based learning. Additionally, respondents acknowledged that Twitter (X) contributes to students' participation in academic discussions, critical thinking, and exposure to current academic trends, reflecting its relevance as a modern learning support tool. However, the finding that Twitter (X) may also serve as a source of distraction ($\bar{X} = 3.05$) highlights the dual nature of its influence on academic engagement. The standard deviation values, ranging from 0.70 to 0.80, indicate a moderate level of consensus among respondents. Therefore, the findings suggest that while Twitter (X) usage positively influences students' academic engagement, its effectiveness depends on the manner and purpose of its use.

Research question two

What is the influence of WhatsApp usage on students' academic engagement in public secondary schools in Cross River State?

Table 2: Respondents' mean ratings and standard deviation on the influence of WhatsApp usage on students' academic engagement in public secondary schools in Cross River State (n = 578)

S/N	Influence indicators	n	Mean	S.D.	Decision
1	WhatsApp usage enhances students' participation in academic group discussions	578	3.34	0.68	SA
2	WhatsApp facilitates sharing of academic materials among students	578	3.38	0.65	SA
3	WhatsApp usage improves students' communication with peers and teachers	578	3.29	0.71	A
4	WhatsApp promotes collaborative learning among students	578	3.32	0.69	SA
5	WhatsApp usage increases students' motivation towards academic activities	578	3.21	0.73	A
6	WhatsApp enhances timely feedback on assignments and tasks	578	3.27	0.70	A
7	WhatsApp usage improves students' access to educational information	578	3.30	0.69	SA
8	Excessive WhatsApp usage may distract students from their studies	578	3.12	0.76	A
9	WhatsApp usage influences students' time management in academic work	578	3.18	0.74	A
10	WhatsApp usage enhances students' overall academic engagement	578	3.33	0.68	SA
	Grand Mean Score	578	3.27	0.70	A

Source: Fieldwork, 2026

The results in Table 2 reveal that respondents generally agreed that WhatsApp usage has a significant influence on students' academic engagement in public secondary schools in Cross River State. The grand mean score of 3.27, which falls within the "Agree" (A) category, indicates that the majority of respondents perceive WhatsApp as a valuable tool for enhancing academic engagement. Notably, higher mean ratings were recorded for items such as sharing of academic materials ($\bar{X} = 3.38$), participation in group discussions ($\bar{X} = 3.34$), and overall academic engagement ($\bar{X} = 3.33$), suggesting that WhatsApp plays a crucial role in facilitating collaborative and interactive learning.

Furthermore, respondents acknowledged that WhatsApp improves communication, provides timely feedback, and increases access to educational resources, all of which contribute to students' behavioral and cognitive engagement. However, the indication that excessive WhatsApp usage may lead to distraction ($\bar{X} = 3.12$) highlights the potential negative implications of unregulated use. The standard deviation values, ranging from 0.65 to 0.76, show a moderate level of agreement among respondents. Therefore, the findings suggest that WhatsApp usage positively influences students' academic engagement, although its effectiveness depends on controlled and purposeful utilization.

Research question three

What is the influence of Facebook usage on students' academic engagement in public secondary schools in Cross River State?

Table 3: Respondents' mean ratings and standard deviation on the influence of Facebook usage on students' academic engagement in public secondary schools in Cross River State (n = 578)

S/N	Influence indicators	n	Mean	S.D.	Decision
1	Facebook usage enhances students' participation in academic discussions	578	3.20	0.73	A
2	Facebook provides access to educational materials relevant to learning	578	3.26	0.70	A
3	Facebook promotes collaborative learning among students	578	3.22	0.72	A
4	Facebook group platforms support academic engagement outside classroom hours	578	3.31	0.68	SA
5	Facebook usage improves students' communication in academic activities	578	3.18	0.74	A
6	Facebook increases students' motivation toward academic tasks	578	3.13	0.76	A
7	Facebook exposes students to academic discussions and learning communities	578	3.21	0.73	A
8	Excessive Facebook usage distracts students from academic work	578	3.07	0.78	A
9	Facebook usage affects students' time management for academic activities	578	3.12	0.75	A
10	Facebook enhances students' overall academic engagement	578	3.24	0.71	A
	Grand Mean Score	578	3.19	0.73	A

Source: *Fieldwork*, 2026

The results in Table 3 indicate that respondents generally agreed that Facebook usage influences students' academic engagement in public secondary schools in Cross River State. The grand mean score of 3.19 shows a positive perception of Facebook as a tool that supports academic engagement. The highest-rated item was the role of Facebook groups in supporting learning beyond the classroom ($\bar{X} = 3.31$), suggesting that structured academic interactions on Facebook enhance student engagement. Furthermore, respondents agreed that Facebook facilitates access to learning materials, promotes collaboration, and improves communication in academic settings. However, it was also observed that excessive use of Facebook may distract students and affect their time management. The standard deviation values (0.68–0.78) indicate a moderate level of agreement among respondents. Thus, the findings suggest that Facebook usage positively influences academic engagement, though its impact depends on regulated and purposeful use.

Research question four

What is the influence of Instagram usage on students' academic engagement in public secondary schools in Cross River State?

Table 4: Respondents' mean ratings and standard deviation on the influence of Instagram usage on students' academic engagement in public secondary schools in Cross River State (n = 578)

S/N	Influence indicators	n	Mean	S.D.	Decision
1	Instagram usage enhances students' interest in academic activities	578	3.16	0.74	A
2	Instagram provides visual learning content that supports understanding	578	3.28	0.70	A
3	Instagram promotes creativity in academic engagement	578	3.24	0.72	A
4	Instagram usage encourages participation in educational discussions	578	3.12	0.76	A
5	Instagram improves students' motivation toward learning tasks	578	3.18	0.73	A
6	Instagram exposes students to educational pages and learning communities	578	3.30	0.69	SA
7	Instagram supports collaborative learning among students	578	3.21	0.71	A
8	Excessive Instagram usage distracts students from academic work	578	3.05	0.79	A
9	Instagram usage affects students' time management for studies	578	3.10	0.77	A
10	Instagram enhances students' overall academic engagement	578	3.23	0.72	A
	Grand Mean Score	578	3.19	0.73	A

Source: *Fieldwork*, 2026

The results presented in Table 4 reveal that respondents generally agreed that Instagram usage influences students' academic engagement in public secondary schools in Cross River State. The grand mean score of 3.19 indicates a positive perception of Instagram as a platform that contributes to students' engagement in learning activities. The highest-rated item was the exposure to educational pages and learning communities ($\bar{X} = 3.30$), suggesting that Instagram serves as a useful medium for accessing educational content and academic networks.

Furthermore, respondents agreed that Instagram enhances visual learning, creativity, motivation, and collaboration among students, all of which support different dimensions of academic engagement. However, it was also observed that excessive use of Instagram may distract students and negatively affect their time management. The standard deviation values ranging from 0.69 to 0.79 indicate a moderate level of agreement among respondents. Overall, the findings suggest that Instagram usage positively influences students' academic engagement, although its impact depends on balanced and purposeful use.

Hypothesis one

There is no significant influence of Twitter (X) usage on students' academic engagement in public secondary schools in Cross River State.

Table 5: One-Way ANOVA showing the influence of Twitter (X) usage on students' academic engagement (n = 578)

Source of Variation	Sum of Squares (SS)	df	Mean Square (MS)	F-cal	Sig.	Decision
Between Groups	18.42	2	9.21	5.87	0.003	Significant
Within Groups	902.15	575	1.57			
Total	920.57	577				

Significant at 0.05 level

Since the p-value (0.003) is less than the 0.05 level of significance, the null hypothesis is rejected. The result of the ANOVA analysis presented in Table 5 indicates that there is a statistically significant influence of Twitter (X) usage on students' academic engagement in public secondary schools in Cross River State. The calculated F-value of 5.87 with a corresponding p-value of 0.003 shows that variations in Twitter (X) usage significantly affect students' level of academic engagement. This implies that students who differ in their levels or patterns of Twitter usage also differ significantly in their academic engagement outcomes. Therefore, the null hypothesis is rejected, and it is concluded that Twitter (X) usage has a significant influence on students' academic engagement in public secondary schools in Cross River State.

Hypothesis two

There is no significant influence of WhatsApp usage on students' academic engagement in public secondary schools in Cross River State.

Table 6: One-Way ANOVA showing the influence of WhatsApp usage on students' academic engagement (n = 578)

Source of Variation	Sum of Squares (SS)	df	Mean Square (MS)	F-cal	Sig.	Decision
Between Groups	21.36	2	10.68	6.74	0.001	Significant
Within Groups	910.28	575	1.58			
Total	931.64	577				

Significant at 0.05 level

The ANOVA results presented in Table 6 show that WhatsApp usage has a statistically significant influence on students' academic engagement in public secondary schools in Cross River State. The calculated F-value of 6.74 with a p-value of 0.001 indicates that differences in WhatsApp usage significantly account for variations in students' academic engagement levels. This suggests that students' engagement in academic activities is meaningfully affected by how they use WhatsApp. Therefore, the null hypothesis is rejected, and it is concluded that WhatsApp usage significantly influences students' academic engagement in public secondary schools in Cross River State.

Hypothesis three

There is no significant influence of Facebook usage on students' academic engagement in public secondary schools in Cross River State.

Table 7: One-Way ANOVA showing the influence of Facebook usage on students' academic engagement (n = 578)

Source of Variation	Sum of Squares (SS)	df	Mean Square (MS)	F-cal	Sig.	Decision
Between Groups	19.84	2	9.92	6.15	0.002	Significant
Within Groups	927.46	575	1.61			
Total	947.30	577				

Significant at 0.05 level

The ANOVA results presented in Table 7 indicate that Facebook usage has a statistically significant influence on students' academic engagement in public secondary schools in Cross River State. The calculated F-value of 6.15 with a corresponding p-value of 0.002 shows that variations in Facebook usage significantly affect students' levels of academic engagement. This implies that differences in how students use Facebook are associated with significant differences in their engagement in academic activities. Therefore, the null hypothesis is rejected, and it is concluded that Facebook usage significantly influences students' academic engagement in public secondary schools in Cross River State.

Hypothesis four

There is no significant influence of Instagram usage on students' academic engagement in public secondary schools in Cross River State.

Table 8: One-Way ANOVA showing the influence of Instagram usage on students' academic engagement (n = 578)

Source of Variation	Sum of Squares (SS)	df	Mean Square (MS)	F-cal	Sig.	Decision
Between Groups	17.96	2	8.98	5.62	0.004	Significant
Within Groups	919.84	575	1.60			
Total	937.80	577				

Significant at 0.05 level

The ANOVA results in Table 8 indicate that Instagram usage has a statistically significant influence on students' academic engagement in public secondary schools in Cross River State. The calculated F-value of 5.62 with a corresponding p-value of 0.004 shows that variations in Instagram usage significantly affect students' academic engagement levels. This suggests that differences in how students use Instagram are associated with meaningful differences in their engagement in

academic activities. Therefore, the null hypothesis is rejected, and it is concluded that Instagram usage significantly influences students' academic engagement in public secondary schools in Cross River State.

Discussion

The findings of this study revealed that Twitter (X) usage has a significant influence on students' academic engagement in public secondary schools in Cross River State, both at the descriptive and inferential levels. This aligns with the findings of Junco et al. (2011) and Gao, Luo, and Zhang (2012), who reported that Twitter enhances interaction, collaboration, and active participation in learning. The present study supports these positions by showing that students use Twitter to access academic content, engage in discussions, and improve critical thinking. However, the finding that Twitter can also serve as a source of distraction slightly contrasts with the overly optimistic views of some earlier studies, thereby reinforcing the argument of Kirschner and Karpinski (2010) and Flanigan and Babchuk (2015) that unregulated usage may reduce academic focus. Thus, this study fills a contextual gap by demonstrating that in Cross River State, the effectiveness of Twitter depends largely on controlled and purposeful usage rather than mere access.

Similarly, the results indicated that WhatsApp usage significantly influences students' academic engagement. This finding is in agreement with Al-Rahmi et al. (2014), Chai-Lee (2013), and Cain et al. (2009), who emphasized the role of WhatsApp in facilitating collaboration, communication, and knowledge sharing among students. The high ratings on group discussions, sharing of materials, and timely feedback in this study further validate these claims. However, the study also found that excessive WhatsApp use leads to distraction and poor time management, which supports the findings of Kuppuswamy and Narayan (2010), Gafni et al. (2012), and Junco and Cotten (2012). While previous studies largely focused on higher education contexts, this study extends the literature by providing empirical evidence from public secondary schools in Cross River State, thereby filling a gap related to younger learners and their engagement patterns.

The findings on Facebook usage also showed a significant influence on students' academic engagement, corroborating the studies of Ellison, Steinfield, and Lampe (2007), Mazman and Usluel (2010), and Aydin (2012), which highlighted Facebook's role in promoting collaboration, communication, and social learning. The present study particularly supports the usefulness of Facebook groups in enhancing engagement beyond the classroom. However, the finding that Facebook can negatively affect students' time management and concentration aligns with Kirschner and Karpinski (2010) and Ogedebe, Emmanuel, and Musa (2012), who reported that excessive use reduces academic commitment. Unlike earlier studies that often emphasized either positive or negative outcomes, this study provides a balanced perspective by empirically demonstrating both dimensions within a specific Nigerian context, thereby addressing inconsistencies in the literature.

Finally, the findings revealed that Instagram usage significantly influences students' academic engagement, supporting the works of Alhabash and Ma (2017), Handayani (2016), and Carpenter et al. (2020), who noted that Instagram enhances visual learning, creativity, and informal learning opportunities. The present study confirms that students benefit from exposure to educational content and learning communities on Instagram. However, the finding that excessive use leads to distraction and reduced engagement is consistent with Kuss and Griffiths (2017), Andreassen (2015), and Odeh et al. (2020). While prior studies have predominantly focused on higher education and general social media addiction, this study fills a critical gap by examining Instagram's specific influence on academic engagement among secondary school students in Cross River State. Therefore, the study contributes to existing knowledge by contextualizing the dual

impact of social media platforms and emphasizing the need for regulated and academically oriented usage to enhance students' engagement.

Conclusion

The study established that social media usage, including Twitter (X), WhatsApp, Facebook, and Instagram, has a significant influence on students' academic engagement in public secondary schools in Cross River State. While these platforms enhance collaboration, communication, and access to learning resources, their unregulated use can lead to distraction and reduced academic focus. Therefore, the effective integration and proper monitoring of social media usage are essential for maximizing its benefits and minimizing its negative impact on students' academic engagement.

Recommendations

- Based on the findings of this study, the following recommendations were made thus:
1. School administrators and teachers should integrate social media platforms such as Twitter (X), WhatsApp, Facebook, and Instagram into teaching and learning processes in a structured and academic-oriented manner to enhance students' engagement.
 2. Clear guidelines and policies should be developed by schools and educational authorities to regulate students' use of social media, minimizing distractions and promoting responsible usage for academic purposes.
 3. Teachers should be trained on how to effectively utilize social media tools for instructional delivery, collaboration, and continuous student engagement both within and outside the classroom.
 4. Parents and guardians should monitor and guide students' social media usage at home to ensure a balance between academic activities and online interactions, thereby improving students' focus and time management.

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