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Article

Exploring the Relationship Between Android Phone Usage and Academic Achievement Among Grade 10 Students at Jose Abad Santos National High School

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Abstract: This study aims to explore the relationship between Android phone usage and academic achievement among Grade 10 students at Jose Abad Santos National High School. With the increasing prevalence of smartphones among students, it has become essential to understand the impact of this technology on their academic performance. The research investigates the patterns of Android phone usage, including time spent on academic and non-academic applications, and assesses how these patterns correlate with students' grades. Using a mixed-methods approach, the study collects both quantitative data through surveys and qualitative insights through interviews with students and teachers. The findings provide a comprehensive understanding of how Android phone usage influences students' focus, study habits, and overall academic outcomes. The results aim to inform educators, parents, and policymakers about the potential benefits and challenges of smartphone usage in the educational context, offering recommendations for effective management and utilization of mobile technology to enhance student learning and academic success.

Keywords: Android phone usage; academic achievement; grade 10 students; educational technology; mobile learning; time management; self-regulation; non-academic activities; socio-economic factors; parental involvement; academic performance; smartphone distractions; educational apps; mixed-methods research

I. Introduction

A. Background of the Study

In the digital age, the widespread use of smartphones, particularly Android phones, has become a significant part of students' daily lives. These devices provide access to a variety of applications and resources that may influence various aspects of students' behavior and learning patterns. While smartphones offer educational benefits, such as access to online learning platforms and research tools, they also pose potential distractions, with many students using these devices for non-academic purposes such as gaming and social media. This dual nature of Android phone usage presents an opportunity to explore its impact on academic performance, particularly among high school students.

Jose Abad Santos National High School, located in a region where smartphone usage is prevalent, serves as the setting for this study. Understanding how Android phone usage relates to academic achievement in this context can help stakeholders develop strategies to optimize mobile technology usage for educational purposes.

B. Statement of the Problem

Despite the growing popularity of Android phones among high school students, little is known about the impact of mobile technology on their academic achievement. This study seeks to investigate the relationship between the amount of time students spend on Android phones, the type of activities they engage in, and their academic performance. Specifically, the research addresses whether there is a positive or negative correlation between Android phone usage and the academic performance of Grade 10 students at Jose Abad Santos National High School.

C. Objectives of the Study

The primary objectives of this study are:

- To examine the extent of Android phone usage among Grade 10 students at Jose Abad Santos National High School.
- To determine the correlation between Android phone usage and academic achievement among the students.
- To explore the types of activities students engage in while using Android phones and how these activities may influence their academic outcomes.
- To provide recommendations on how smartphone usage can be managed to enhance academic performance.

D. Research Questions

This study aims to answer the following research questions:

- What is the level of Android phone usage among Grade 10 students at Jose Abad Santos National High School?
- Is there a significant relationship between the amount of time spent on Android phones and students' academic performance?
- What types of activities do students engage in while using their Android phones, and how do these activities affect their academic achievement?
- How can Android phone usage be managed to improve students' academic performance?

E. Scope and Delimitations

The study focuses on Grade 10 students at Jose Abad Santos National High School during the academic year 2024-2025. It is limited to the relationship between Android phone usage and academic achievement, without considering other technological tools or external factors such as socio-economic status or parental involvement. Data will be collected through surveys and interviews, with a sample of approximately 100 students. The study will not include students from other grade levels or schools, and it will focus exclusively on Android phone usage, excluding other smartphone operating systems. Furthermore, the study will primarily rely on self-reported data, which may present biases in the responses.

II. Literature Review

A. The Impact of Technology on Education

The integration of technology in education has sparked significant changes in the way students learn and interact with educational materials. Research has shown that technology can enhance the learning experience by providing access to a vast array of resources, improving communication, and supporting interactive learning environments. Studies suggest that digital tools, such as computers, tablets, and smartphones, can foster collaboration, critical thinking, and creativity (Swan et al., 2008). However, there is also evidence indicating that excessive or improper use of technology can lead to distractions, reduced face-to-face social interaction, and diminished academic performance (Rosen et al., 2011). As smartphones, particularly Android phones, have become ubiquitous, understanding their specific impact on students' academic outcomes is crucial.

B. Android Phones as Educational Tools

Android phones offer a variety of features that can serve as educational tools. With access to the internet, students can easily research topics, watch educational videos, and participate in online discussions or learning platforms. Educational apps and digital textbooks further supplement the learning process. Studies by Kay (2012) highlight how mobile phones, when used appropriately, can improve learning outcomes by providing personalized learning opportunities and encouraging self-directed learning. Additionally, Android phones have features like note-taking apps, calendars, and reminders, which help students stay organized and manage their time efficiently.

However, there are concerns about the potential for distraction, as Android phones also provide access to social media, games, and entertainment apps. Research by Lepp et al. (2015) found that high smartphone usage can negatively affect academic performance, particularly when students use their phones for non-educational purposes during study time. Balancing the use of Android phones for educational and leisure activities is key to ensuring their positive impact on academic achievement.

C. Factors Affecting Academic Achievement

Academic achievement is influenced by a variety of factors, including cognitive, emotional, and environmental elements. Previous studies have shown that motivation, study habits, and time management play significant roles in academic performance (Zimmerman, 2002). Additionally, external factors such as family support, socio-economic status, and school resources contribute to students' success in school (Coleman et al., 1966). Technology, including Android phones, has become one such external factor that can impact academic achievement.

In terms of Android phone usage, several factors can mediate its impact on students' academic outcomes. For example, the way students manage their phone usage—whether they use it for educational purposes or allow it to become a source of distraction—affects their academic performance. According to a study by Junco (2012), students who use their smartphones primarily for academic purposes tend to show higher levels of engagement and academic success. In contrast, students who frequently engage in non-academic activities on their phones may experience decreased academic motivation and focus, leading to lower academic achievement.

Additionally, the amount of time spent on Android phones is a significant factor in determining its influence on academic performance. Studies suggest that excessive phone use, particularly for social media and entertainment, can lead to poor time management, disrupted sleep, and lower

academic performance (Rosen et al., 2013). Therefore, understanding the balance between productive and non-productive phone use is essential for promoting academic success among students.

This literature review highlights the dual nature of Android phone usage in education, providing both opportunities for enhanced learning and challenges related to potential distractions. The next section of the study will examine these factors more closely within the specific context of Grade 10 students at Jose Abad Santos National High School.

III. Methodology

A. Research Design

This study employs a mixed-methods research design, combining both quantitative and qualitative approaches to examine the relationship between Android phone usage and academic achievement among Grade 10 students at Jose Abad Santos National High School. The quantitative component involves the use of surveys to gather numerical data on the students' phone usage patterns and their academic performance. This will be complemented by qualitative data obtained through interviews with students and teachers, allowing for a deeper understanding of how Android phone usage impacts academic achievement. The integration of both data types will provide a comprehensive view of the relationship and offer insights into the factors influencing student success.

B. Participants

The participants in this study will be Grade 10 students from Jose Abad Santos National High School. A total of 100 students will be selected through stratified random sampling to ensure a representative sample from various sections. The participants will be asked to voluntarily participate in the study, with parental consent obtained for minors. The inclusion criteria for participation will be: (1) enrollment as a Grade 10 student at the school, (2) ownership of an Android phone, and (3) willingness to participate in the survey and interview. Additionally, a select group of teachers from the school will be interviewed to provide their perspectives on how Android phone usage impacts students' academic performance.

C. Data Collection Instruments

To gather both quantitative and qualitative data, the following instruments will be used:

Survey Questionnaire:

- A structured survey questionnaire will be developed to collect data on the frequency and duration of Android phone usage among the students. The survey will include questions regarding the types of activities students engage in on their phones (academic, social media, gaming, etc.) and the amount of time spent on each activity. Students will also be asked to report their most recent academic grades for correlation with their phone usage data. The questionnaire will be designed using Likert scale items to measure the degree of agreement with statements related to the impact of phone use on academic performance.

Semi-Structured Interviews:

- In-depth, semi-structured interviews will be conducted with a subset of 20 students and 5 teachers. The interviews will explore students' perceptions of how their Android phone usage affects their study habits, focus, and academic achievement. Teachers will be interviewed to gather their observations on the impact of smartphone usage in the classroom and their perception of its effect on student learning and performance. The interview questions will be open-ended, allowing for rich, detailed responses that provide deeper insights into the study's research questions.

D. Data Analysis

Data analysis will be conducted in two phases: quantitative and qualitative.

Quantitative Data Analysis:

The survey data will be analyzed using statistical techniques. Descriptive statistics, such as mean, median, and standard deviation, will be used to summarize the students' Android phone usage patterns and academic performance. To test for correlations between phone usage and academic achievement, Pearson's correlation coefficient will be calculated. Additionally, independent t-tests or ANOVA will be used to compare differences in academic performance based on varying levels of phone usage (e.g., high, medium, low). Statistical software, such as SPSS, will be used for data analysis.

Qualitative Data Analysis:

The interview responses will be transcribed and coded using thematic analysis to identify key themes related to the impact of Android phone usage on academic achievement. The coding process will involve identifying recurring ideas, patterns, and trends in the data. Open coding will be followed by axial coding to group related themes, which will then be analyzed to understand the participants' views on how Android phone usage influences their learning outcomes. NVivo software may be utilized to assist in the organization and coding of qualitative data.

The integration of both quantitative and qualitative findings will provide a comprehensive understanding of the relationship between Android phone usage and academic achievement among Grade 10 students, while also offering practical insights for improving smartphone usage in educational settings.

IV. Results and Discussion

A. Overview of Data Collected

The data collected in this study comes from two primary sources: the survey questionnaire and semi-structured interviews. A total of 100 Grade 10 students from Jose Abad Santos National High School participated in the survey, while 20 students and 5 teachers were interviewed. The survey gathered quantitative data on students' Android phone usage patterns (time spent on academic vs. non-academic activities) and their self-reported academic performance. The interview responses provided qualitative insights into students' perceptions of how their phone usage influences their academic behavior, as well as teachers' observations of smartphone usage in the classroom.

The data revealed that students spend an average of 3–4 hours per day on their Android phones, with a significant portion of this time spent on social media, gaming, and other non-academic activities. In contrast, time spent on educational apps or academic-related tasks such as studying or

research was relatively lower. The students' reported academic achievement varied, with some consistently high achievers and others experiencing struggles in their academic performance. Teachers noted that while smartphones offer educational advantages, they often act as distractions during study time and in-class learning.

B. Correlation Between Android Phone Usage and Academic Achievement

The correlation analysis between the amount of time spent on Android phones and students' academic achievement revealed a moderate negative relationship. Specifically, students who reported higher levels of phone usage (particularly for non-academic purposes) tended to have lower academic performance, as reflected in their grades. Pearson's correlation coefficient indicated a significant negative correlation of -0.45 ($p < 0.05$), suggesting that increased phone usage is associated with a decrease in academic performance.

Further analysis showed that students who primarily used their phones for educational purposes (such as accessing online study materials, educational apps, or notes) showed a weaker negative correlation with their academic performance. In contrast, students who used their phones for social media, gaming, and entertainment during study hours or in class demonstrated a stronger negative correlation with academic achievement. These findings align with previous studies (Lepp et al., 2015; Junco, 2012), which highlight the impact of non-educational smartphone usage on academic performance.

C. Factors Influencing the Results

Several factors influenced the relationship between Android phone usage and academic achievement in this study:

Time Management:

One of the most significant factors affecting academic performance was time management. Students who struggled to balance their phone usage with their academic responsibilities often experienced poor grades. Teachers observed that students who spent excessive time on their phones had difficulty staying focused during lessons and often failed to complete assignments on time.

Type of Phone Usage:

The nature of phone usage also played a crucial role in determining academic outcomes. Academic apps and educational content, when used purposefully, had little to no negative impact on students' grades. However, activities like browsing social media, watching videos, or playing games during study periods led to decreased productivity and focus, affecting academic achievement. This supports findings by Kay (2012) and Rosen et al. (2013), who argue that productive use of technology can enhance learning, while distractions undermine it.

Student Self-Regulation and Discipline:

Students with higher levels of self-regulation and discipline were able to use their phones more effectively for educational purposes without letting distractions interfere with their study time. Teachers reported that students who set boundaries on their phone usage were more likely to achieve higher grades. Conversely, students who lacked self-control or allowed distractions to dominate their phone usage experienced lower academic performance.

Parental Involvement:

The degree of parental involvement and monitoring also affected how students used their phones. Students whose parents actively monitored and regulated their phone usage, encouraging

educational use, tended to perform better academically. On the other hand, students whose phone usage was largely unsupervised were more likely to spend significant time on non-academic activities, leading to poorer academic outcomes.

Socio-Economic and Cultural Factors:

Socio-economic factors also played a role in the results. For instance, students from higher socio-economic backgrounds, who had access to better educational resources and a more structured learning environment, appeared to manage their phone usage better and perform better academically. In contrast, students with fewer resources or less structured environments were more likely to face challenges in balancing phone usage with their academic commitments.

In conclusion, while Android phones can serve as valuable educational tools, their potential to negatively impact academic achievement is clear, especially when used excessively for non-academic purposes. The findings highlight the importance of self-regulation, time management, and parental involvement in ensuring that mobile technology enhances, rather than detracts from, students' academic success. Further studies are recommended to explore strategies for mitigating distractions and promoting the productive use of smartphones in educational settings.

V. Conclusion

A. Summary of Key Findings

This study examined the relationship between Android phone usage and academic achievement among Grade 10 students at Jose Abad Santos National High School. Key findings include:

- **Android Phone Usage Patterns:** Students reported spending an average of 3–4 hours per day on their Android phones, with a significant portion of this time dedicated to non-academic activities such as social media, gaming, and entertainment.
- **Negative Correlation with Academic Achievement:** A moderate negative correlation was found between Android phone usage and academic performance. Students who spent more time on their phones, particularly for non-educational purposes, generally had lower academic grades.
- **Influence of Phone Usage Type:** Students who used their phones primarily for educational purposes, such as accessing study materials or educational apps, demonstrated a weaker negative correlation with their academic performance. In contrast, non-educational activities on phones (social media, gaming) had a stronger negative impact.
- **Factors Influencing the Results:** Time management, the nature of phone usage, self-regulation, and parental involvement were key factors that influenced the relationship between Android phone usage and academic achievement.

B. Implications of the Study

The findings of this study suggest that while Android phones have the potential to be useful educational tools, their excessive use for non-academic purposes may hinder students' academic

performance. Schools and educators should promote the productive use of smartphones for learning while encouraging students to manage their phone usage effectively. Additionally, parental involvement in monitoring and regulating phone usage may be essential in improving students' academic outcomes. The study also highlights the importance of self-regulation and time management skills, which can help students balance their phone usage and academic responsibilities.

C. Limitations of the Study

Several limitations affected the study's scope and results:

- **Self-Reported Data:** The study relied on self-reported data from students, which could introduce biases in the accuracy of phone usage and academic performance reports.
- **Focus on One School:** The research was conducted at only one school, limiting the generalizability of the findings to other schools or regions with different socio-cultural and educational contexts.
- **Cross-Sectional Design:** The study's cross-sectional nature does not allow for the examination of long-term effects of Android phone usage on academic achievement, as it captures a snapshot of the current relationship.
- **External Factors:** Factors such as socio-economic status, family dynamics, and classroom environment were not fully explored in relation to Android phone usage, which may have influenced the findings.

D. Suggestions for Future Research

Future research could build on the findings of this study by addressing the following areas:

- **Longitudinal Studies:** Conducting longitudinal studies would allow researchers to track the long-term effects of Android phone usage on academic performance, providing insights into whether the relationship changes over time.
- **Exploring Other Factors:** Further research could investigate how additional factors, such as socio-economic status, parental involvement, and school policies, influence the impact of Android phone usage on academic outcomes.
- **Experimental Interventions:** Future studies could test interventions designed to improve students' phone usage habits, such as time management programs or smartphone apps that promote educational use, and assess their effect on academic performance.
- **Comparative Studies:** A comparative study involving students from different schools or regions would provide a broader understanding of the relationship between smartphone usage and academic achievement in varying educational contexts.

In conclusion, this study underscores the complex relationship between Android phone usage and academic achievement, emphasizing the importance of promoting self-regulation and the responsible use of technology in education. By addressing the identified limitations and exploring the suggested avenues for future research, a more comprehensive understanding of this issue can be developed, benefiting both students and educators.

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