

The Impact of Smartphone Usage on the Academic Performance of High School Students in Kandahar City

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ABSTRACT

The increasing use of smartphones among students has raised concerns and opportunities regarding their impact on academic performance. The aim of this study was to determine the pattern of smartphone use and the correlation between the use of smartphone and academic performance of high school students in Kandahar city. A quantitative cross-sectional correlational design was used to collect data through a structured questionnaire from 376 students across public and private schools. Stratified and simple random sampling techniques were used to select students. The descriptive and inferential statistics were used for data analysis in IBM SPSS version 26. The results showed that almost all students owned and regularly used smartphones, with substantial variation in frequency and purpose of use. Descriptive results showed that students predominantly using smartphones for academic purposes performed better than those, who use them for non-academic purposes. However, the inferential tests gave mixed results: The chi-square test found a significant association between the academic performance and the daily usage of the smartphone. One-way ANOVA test showed no significant difference in academic focus by usage types. Students also reported some considerable academic benefits of the smartphones, such as reviewing lectures, accessing learning resources and improving understanding, but also pointed to moderately negative results, mainly loss of study time and distraction by non-academic content. The results demonstrate that smartphones have dual nature: they can be educational resources and distractors. The study highlights the importance of implementing balanced smartphone policies and emphasizes parental and teacher guidance to encourage productive use of smartphones among students.

KEYWORDS: Academic Performance, Academic Distraction, High School Students, Smartphone Usage

1. INTRODUCTION

Smartphones are essential devices students use in their daily lives, that provide them access to instructional materials, communication platforms and entertainment content. Their rapid expansion has changed

students' learning styles, communication, and time management, offering advantages, such as immediate access to information through digital learning sources. However, concerns arise regarding the negative effects like, distraction, poor study habits and lower academic performance. Globally, the teaching and learning environments have been significantly influenced by smartphones (Darko-Adjei, 2019). These tools are a combination of telephony, online browsing and apps for social media, games and education and are widely used for communication, information search and social interaction.

A UNESCO report (2023), involving more than 200 countries, indicated that less than a quarter of them restrict smartphone use in schools. However, teachers, parents and school authorities are concerned about the well-being of students such as cyber harassment, access to inappropriate information, less social interaction, and disruption in academic performance (Bia, 2018; Baluch, 2018; Moore, 2018). Educational experts such as Pasi Sahlberg, claim that smartphones can distract pupils from reading, schoolwork, physical activity and restful sleep (as cited in Baker, 2018). Surveys show trends of smartphone use in youth: in the U.S., teenagers spend 41% and 46% of their screen time on mobile devices, mostly for passive use (Common Sense, 2015). Similarly, Australian teens use their phones mainly for apps, internet browsing, chatting and calling, with 35% reporting that they feel uncomfortable when away from their phones (Australian Psychological Society, 2017).

Smartphone use is increasing among high school students in Kandahar City, Afghanistan, but there is limited research to show its effect on academic performance. This study explores the patterns, purposes and extent of smartphone use and its association with academic performance. It offers guidance for teachers, parents and policy makers to encourage healthier and better use of technology among high school students.

1.2. Research Problem

The rapid growth of smartphone technology has changed the ways of getting access to educational materials, communicating and organizing daily routines by students. Smartphones provide educational benefits, such as access to learning resources, online collaboration, and digital learning platforms (Anshari et al., 2017; Leis et al., 2015). Nonetheless, the overuse or abuse of smartphones has raised concerns about academic achievement (Kuznekoff & Titsworth, 2013; Ravizza et al., 2014). Research studies conducted worldwide present mixed results, some emphasizing the positive educational uses of technology, others associating excessive use of it to distraction, poor concentration, sleep disturbances, and lower academic achievement (Grant et al., 2019; Gligor & Mozoş, 2019). Although existing research has extensively examined smartphone usage among students, most studies have focused on university and college students in developing countries. Limited attention has been given to high school students in developing and

understudied region such as Kandahar, Afghanistan. There is limited evidence on how patterns of smartphone use, including academic versus non-academic use, time spent, and multitasking, affect academic performance among Afghan students. Given the increasing smartphone adoption and lack of formal digital policies in schools, understanding their impact on high school students' academic outcomes is crucial for informed decisions about integrating or regulating smartphone use in schools by policymakers, administrators and teachers. Therefore, this study addresses the mentioned problem and aims to fill this gap by investigative the impacts of smartphone usage on the academic performance of high school students in Kandahar City, Afghanistan.

1.3. Research Objectives

1. To determine the use of smartphones among high school students in Kandahar city.
2. To examine the relationship between smartphone usage and the academic performance of high school students.

1.4. Research Questions

1. What are the patterns of smartphone usage among high school students in Kandahar city?
2. What is the relationship between smartphone usage and the academic performance of high school students?

1.5. Hypothesis

H1: There is a significant relationship between the frequency of smartphone usage (daily hours) and students' academic performance (grades category).

H2: There is a significant difference in students' ability to focus on academic tasks among those who use smartphones for academic purposes, non-academic purposes, and both.

1.6. Significance of the Study

This study offers essential information about the effects of smartphone usage on the educational achievements of the high school students in Kandahar city. These findings will help school administrators, teachers, parents and policy makers in developing strategies and policies for appropriate smartphone use in classrooms and at home. Help educators develop programs that teach digital literacy and time management skills to students. Raise the awareness of students about the negative effects of excessive and non-academic usage of smartphones. This research also contributes providing new perceptions to the current body of knowledge on educational technology in underdeveloped countries like Afghanistan.

2. LITERATURE REVIEW

In this study, a thematic literature review approach was used to investigate the effects of smartphone use on the academic performance of high school students. This review synthesizes two themes namely, integration of smartphones in education and benefits and challenges of smartphone use for students.

2.1. Smartphone Integration in Education

Smartphones have become portable learning environments, providing mobility, connectivity and access to academic resources (Buck et al., 2013; Kolb, 2011). They encourage independent learning and adapt to different learning styles (Buck et al., 2013). Kolb (2011) noted the need for educators to rethink pedagogy and to embrace educational innovation in the use of these devices. Mahesh et al. (2016) referred to smartphones as portable encyclopedias, allowing students to access information in real time. Perceptions have shifted over time from seeing them as distractions to seeing their academic potential (Thomas et al., 2013; Buck et al., 2013).

Today's students, known as digital natives, prefer interactive and visual learning. Mobile learning (m-learning) allows students to access a variety of educational resources to develop their own knowledge (Robb & Shellenbarger, 2012). Ott et al. (2017) found that secondary school students in Sweden recognized the advantages and disadvantages of smartphones, perceiving them as tools that facilitate schoolwork, but also create distractions. Moreover, smartphones have been found to support collaboration, motivation, engagement and learner satisfaction in various contexts (Hee Jin, 2014; Thomas et al., 2013; Howlett & Waemusa, 2019).

However, patterns of use vary. A survey of 200 Indian medical students showed that every participant owned smartphones but only 12.2% used them for academic purposes. Surprisingly, 68.8% of the respondents used them inside the classroom and 44.2% reported distraction and 34.2% reported less ability to focus on their studies due to over use (Santhi & Rajesh, 2020).

Teachers have essential role in shaping how smartphones are incorporated in learning. The success of mobile technology in the classroom is highly dependent on teachers' willingness to use mobile technology (Papadakis, 2018). Concerns about distraction still exist (Thomas et al., 2013), but the advantages are becoming more widely acknowledged. Teachers should guide students in purposeful use and establish clear rules to differentiate learning from entertainment (Buck et al., 2013; Clayton & Murphy, 2016).

A study conducted in Kandahar University found that lecturers permitted smartphones to be used for all academic purposes in the classroom as an educational tool except for social media (Wali & Omaid, 2020).

Similarly, another study by Ahmad et al. (2024) that included 160 secondary school teachers from Karachi revealed that teachers view smartphones as useful for learning and skill development. However, there are concerns about mental health and misuse. The study suggested that teachers and parents should monitor and regulate students' mobile phone use for their well-being.

Teachers, parents and students in China agreed on limiting phone use during class but were against blanket bans (Gao et al., 2017). In New Zealand, both teachers and students were in favor of regulation rather than prohibition, with concerns regarding safety, cyberbullying and distraction. The majority of participants believed that students should not be allowed to use smartphones in class (Gath et al., 2024). Teachers, parents and students support controls on smartphone access and use at school. To support learning and reduce distraction, phone-free schools should clearly state the purpose and context of their policies (Rahali et al., 2024).

2.2. Benefits and Challenges of Smartphone Use for Students

Smartphones have considerable educational advantages, such as portability, multimodal learning through visual, auditory, and textual resources, and reduced dependence on printed materials (Anshari et al., 2017; Leis et al., 2015). When used strategically, they enhance student motivation, interactivity and pedagogical innovation (Thomas et al., 2013; Scomavacca et al., 2009). Goal-directed use like information searching, completing assignments and using communication tools can be useful for learning (Lane et al., 2021).

However, these benefits are not without challenges. Inappropriate or overuse of smartphones often interferes with learning, limits attention and leads to negative educational impacts (Campbell, 2005); causes student disengagement, lower academic performance (Bello & Aliyu, 2022); contributes to poor mental health, sleep quality and weaker social relationships (Sunday et al., 2021). Also reduce the time spent on reading, school work and even sleeping (Baker, 2018).

Other studies have found that non-academic use of mobile devices in class has an adverse impact on academic outcomes (Ravizza et al., 2014; Kuznekoff & Titsworth, 2013). Glass and Kang (2018) found that in-class use of smartphones had a substantial effect on long-term academic performance, but it did not affect short-term comprehension. Grant et al. (2019) and Arumugam et al (2020) found a negative correlation between smartphone use and GPA. Likewise, Praveeni and Wickramasinghe (2021) and Gligor and Mozoş (2019) have pointed out the interruption of classroom learning by smartphones through multitasking and social interactions.

These tensions are reflected in global policies on smartphone use. France has banned the use of mobile phones by students under 15 to improve concentration and cut cyber-bullying (Hudson, 2018; SBS, 2018), while New York has reversed its earlier ban on safety and equity reasons (Reuters, 2015). Some states in Australia restrict phone use while others support integration in preparation for students' future learning (Russell, 2018; Evans, 2018). A longitudinal study in the UK by Beland and Murphy (2015) found that banning mobile phones improved performance with the greatest benefits for students with poor performance. Selwyn & Aagaard (2021) suggest that prohibiting phones may not address underlying issues and students need to be taught how to manage the risks of mobile technology.

A research report notes that worldwide, in 1 out of 7 countries has passed laws, policies, strategies or guidelines that require or recommend public schools to restrict students' use of smartphones during school day, especially in Central and Southern Asia, North Africa and Western Asia. This report collects evidence from across the world where schools have implemented smartphone 'bans' or, more correctly, 'partial restrictions'. The results suggest that such policies can be beneficial for learning, especially for struggling students (Rahali et al., 2024).

The literature as a whole, presents smartphone as both opportunities and risks in education. Academic use can improve learning, motivation and engagement but non-academic use and overuse often harm performance. This requires digital knowledge, assistance from parents and teachers and clear school regulations to encourage appropriate use. However, most of the studies are done on college students, therefore there is little evidence about high school students in developing regions like Kandahar, Afghanistan. Thus, the goal of this study is to address this gap.

3. METHODOLOGY

3.1. Research Design

In this study the quantitative cross-sectional correlational research design was used to explore the relationship between smart phone usage and academic performance of high school students in Kandahar city. The quantitative approach was chosen because it made it possible to gather and examine numerical data about smartphone usage patterns and academic achievement. The cross-sectional design of the study enabled data to be collected at a single point in time, while the correlational design provided a way to investigate whether relationships existed between smartphone usage variables and students' educational success.

3.2. Study Site and Duration

The research was conducted at high schools in Kandahar city during three-months period, from April 30, 2025, to July 30, 2025. Both public and private high schools in the city were included in the study.

3.3. Population and Sample

High school students in the city of Kandahar made up the target population of the study. There were 49 high schools in the city, 34 of which were public and 15 private with a student population of 16069, based on the records obtained from the Department of Education. Using Krejcie and Morgan (1970) sample size determination table, a sample of 376 students was selected to ensure representativeness. To guarantee sufficient representation of both public and private schools, a stratified random sampling technique was used. From the selected schools, students in grades 10, 11 and 12 were selected randomly. This strategy made it possible to guarantee that the study fairly reflected the various student demographics.

3.4. Inclusion and Exclusion Criteria

Students in grades 10 to 12 who owned smartphones and willingly consented to take part in the study were included. Students who were not in grades 10-12, did not own smartphones, refused to participate, or were absent during data collection were excluded from this study.

3.5. Data Collection Instrument

A structured self-administered questionnaire was developed based on a comprehensive review of previous studies and consisted of four sections to collect information on students' socio-demographic characteristics, smartphone ownership, frequency of use, and purposes of use. The questionnaire also included 15 items on a 5-point Likert-scale ranging from (1=strongly disagree to 5=strongly agree), measuring students' perceptions of the influence of smartphone usage on academic performance, as well as 10 items on a 5-point Likert-scale ranging from (1. Never to 5. Always) assessing its potential adverse effects on learning. A pilot study was conducted with 20 students to assess clarity and reliability.

3.6. Validity and Reliability

Validity and reliability were carefully examined, to ensure the quality of the instrument. The content validity of the questionnaire was checked by a panel of experts, who assessed it for clarity, relevance, and consistency with the objectives of the study. Their suggested points were added to improve the wording and accuracy of several items. Reliability was measured using Cronbach's Alpha to determine the internal reliability of the questionnaire scales. Results showed that both instrument parts had a high degree of reliability.

Table 1. Reliability Statistics of the Questionnaire

Scale/Section	Cronbach's Alpha	N of Items
Influence of smartphone usage on academic performance	.889	15
Adverse effects of smartphone usage on academic performance	.905	10

The Cronbach's Alpha coefficients exceeded the widely accepted threshold of .70, which indicates high internal consistency, as shown in Table 1, thus confirming the reliability of the instrument for measuring the perceived advantages and disadvantages of smartphone usage on academic performance.

3.7. Data Collection Procedure

After obtaining permission from the officials, the researchers visited the chosen schools and invited students to take part in the study. Before completing the questionnaire, respondents were informed of the study's purpose and participation was completely voluntary. Questionnaires were distributed and collected during the school hours, with guidance provided whenever clarification was needed.

3.8. Data Analysis

The data were entered and analysed using SPSS version 26. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize the characteristics and smartphone usage patterns of the participants. The study hypothesis and the relationship between variables were examined using inferential statistical techniques, specifically the Chi-square test and one-way ANOVA.

3.9. Ethical Considerations

Ethical standards were maintained during the research process. Before data collection, all respondents gave their informed consent, and participation was voluntary. Participants' anonymity and confidentiality were protected, and they were told that they can withdraw from the study at any time if they did not wish to participate. Additionally, before starting the research, permission and ethical approval were obtained from the educational authorities.

4. RESULTS

This section of the study presents the findings. The socio-demographic profiles of the participants, their smartphone ownership, usage patterns, and their perceptions regarding the impact of smartphones on educational outcomes, including positive and negative effects are displayed in tables and charts. Data collected through questionnaires show the frequency and purposes for which students use smartphones, and their relationship with educational achievement and challenges.

Table 2. Socio-demographic characteristics of the participants (n=376)

Variable	Frequency	Percentage
Age		
13-15	35	9.3
16-18	220	58.5
19-21	108	28.7
Above 21	13	3.5
Grade/Class level		
10 th	115	30.6
11 th	122	32.4
12 th	139	37.0
School Type		
Public	222	59.0
Private	154	41.0
Total	376	100.0

Table 2 shows that most of the students, 220 (58.5%), were aged 16-18 years, and the highest proportion, 139 (37.0%), were in 12th grade. Additionally, 222 (59.0%) of the participants were from public schools and 154 (41.0%) were from private schools. These figures show that most of the respondents were senior high school students, and more respondents are from public schools.

Table 3. Smartphone ownership, usage frequency and purposes

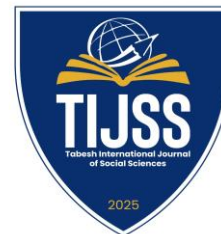
Questions	Responses	Frequency	Percentage
Internet access on a smartphone?	Yes	356	94.7
	No	20	5.3
Where do you use your smartphone?	Inside the class	4	1.1
	Outside the class	274	72.9
	Both	98	26.1
Daily smartphone usage?	1 hour	77	20.5
	1-3 hours	150	39.9
	4-6 hours	84	22.3
	>6 hours	65	17.3
The purpose of smartphone usage?	Academic	93	24.7
	Non-academic	22	5.9
	Both	261	69.4
	Studying	227	13.4

Primary purposes of smartphone use?	Social media	225	13.3
	Messaging	177	10.4
	Gaming	163	9.6
	Watching Videos	145	8.6
	Browsing the internet	230	13.6
	Calling	174	10.3
	Recording class lectures	109	6.4
	Using educational apps	143	8.4
	Other	101	6.0
Grade in the Class	1-10	259	68.9
	11-20	100	26.6
	21-30	14	3.7
	above 30	3	0.8
Current academic grade average	Excellent (90-100)	67	17.8
	Good (75-89)	201	53.5
	Average (60-74)	89	23.7
	Poor (<60)	19	5.1
Compared to last year, your performance has	Improved	198	52.7
	Stayed the same	97	25.8
	Declined	81	21.5

Table 3 shows that most, 356 (94.7%) students have access to the internet. The majority of them (274, 72.9%) use smartphones outside the classroom, only 4 (1.1%) use them only inside the classroom, and 98 (26.1%) students reported using them both inside and outside the classroom. The highest range of daily usage of smartphones was 1-3 hours, with 150 (39.9%) reporting usage in this range, while 65 (17.3%) reported using them for more than 6 hours. On the purpose, a large number, 261 (69.4%) use smartphones for both academic and non-academic purposes. Most common activities are using internet (230, 13.6%), studying (227, 13.4%) and using social media (225, 13.3%). More than half of the students 201 (53.5%) said their current academic performance was "good" and 198 (52.7%) said their performance has improved over last year. The findings indicate that smartphones are used by students for multiple purposes.

Table 4. Determining the influence of smartphone usage on academic performance

Statements	Mean	Std. Deviation
1. Smartphone use positively influences my academic performance.	3.44	1.28
2. My academic achievement depends on smartphone use.	3.11	1.27
3. I feel smartphone use makes me more confident in my studies.	3.03	1.40



4. I rely on my smartphone for accessing class notes and resources.	3.57	1.33
5. Using my smartphone influences my ability to focus on academic tasks.	3.19	1.28
6. Smartphone use makes studying more convenient.	3.80	1.19
7. My academic performance has improved since I started using the smartphone.	3.35	1.27
8. Using a smartphone for academic purposes helps me understand lessons better.	3.92	1.12
9. Smartphone use has helped me complete assignments more efficiently.	3.44	1.38
10. I use a smartphone to review lessons and prepare for the exam.	3.13	1.41
11. I believe that access to supplementary learning materials through smartphones improves my academic achievement.	3.58	1.28
12. Smartphones help me collaborate with classmates on assignments.	3.64	1.36
13. I believe smartphones are essential tools for modern learning.	4.08	1.04
14. Smartphones support independent learning outside the classroom.	3.90	1.17
15. The way I use my smartphone has a direct impact on my grades.	3.29	1.34

Likert Scale: (1. Strongly Disagree, 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly Agree)

With an aggregate mean of 3.53, Table 4 shows how high school students generally perceive smartphones as beneficial for their educational outcomes. Items like “smartphones are basic tools for modern learning” (M=4.08, SD=1.04) and “using smartphones for academic purposes helps me understanding lessons better” (M=3.92, SD=1.12) had the highest level of agreement, indicating that students find them helpful for independent learning and resources access. Lower means were found for “academic achievement depends on smartphone use” (M=3.11, SD=1.27) and “smartphone use makes me more confident in studies” (M=3.03, SD=1.40), showing mixed opinions on the impact of smartphone use on confidence and direct dependency. Due to their ease of use, accessibility to resources and capacity to improve learning, students generally view smartphones as helpful tools for their educational activities; nevertheless, not every component of performance is impacted to the same degree.

Table 5. Determining the adverse effects of smartphone usage on academic performance

Statements	Mean	Std. Deviation
1. I am easily distracted by non-academic content while using smartphones.	3.29	1.36
2. I delay completing homework because of my smartphone use.	3.04	1.38

3. Overuse of smartphones reduces my study time.	3.40	1.40
4. Excessive smartphone usage has led to a decline in my academic performance.	3.31	1.43
5. I waste a lot of academic time on entertainment or social media apps.	2.65	1.48
6. I skip assignments due to being on the phone for too long.	2.82	1.47
7. Excessive phone use reduces my study productivity.	3.02	1.41
8. I feel I waste study time because of smartphone distractions.	3.09	1.46
9. I spend more time on the phone than on academic reading.	2.80	1.49
10. I find it difficult to concentrate on my lessons and homework due to phone use.	2.76	1.48

Likert Scale: (1. Never, 2. Rarely, 3. Sometimes, 4. Often, 5. Always)

With an aggregate mean of 3.03, Table 5 demonstrates that the negative impact of smartphone use on students' academic performance are moderate. "Overuse of smartphones reduces my study time" (M=3.40, SD=1.40) received the highest mean score, followed by "I am easily distracted by non-academic content while using smartphones" (M=3.29, SD=1.36) and "Excessive smartphone usage has led to a decline in my academic performance" (M=3.31, SD=1.43). The findings indicate that distraction and lost study time are students' biggest concerns. Conversely, lower means were found for statements like "I find it difficult to concentrate on my lessons and homework due to phone use" (M=2.76, SD=1.48) and "I waste much academic time on entertainment or social media apps" (M=2.65, SD=1.48). This implies that although there are negative consequences, they are perceived moderately rather than severely. While most students acknowledge that smartphones can be distracting and reduce study time, but the degree of these effects differs depending on their behaviors.

Hypothesis tests

Hypothesis 1: There is a significant relationship between the frequency of smartphone usage (daily hours) and students' academic performance (grades category).

Table 6. Current academic grade average Crosstabulation

Daily smartphone usage	Excellent (90-100)	Good (75-89)	Average (60-74)	Poor (<60)	
<1 hour	18	36	22	1	77
1-3 hours	28	96	25	1	150
4-6 hours	12	42	21	9	84
>6 hours	9	27	21	8	65
Total	67	201	89	19	376

Table 7. Chi-Square Tests

	Value	df	p
Pearson Chi-Square	34.199	9	.000
Likelihood Ratio	35.306	9	.000
Linear-by-Linear Association	13.813	1	.000
N of Valid Cases	376		

The Chi-square test was used to determine the relationship between daily usage of smartphone and the academic performance of students. Results indicated a significant association, $\chi^2(9, N=376) = 34.20$, $p < .001$, suggesting that the frequency of smartphone use is associated with students' grades. Among students who used smartphones for less than 1 hour per day, 18 (23.4%) obtained excellent grades, whereas students who used smartphones for 1-3 hours per day had the highest proportion of "Good" grades (96, 64.0%). Furthermore, students who used smartphones more than 6 hours per day had a higher proportion of "Average" and "Poor" grades (21, 32.3% and 8, 12.3%, respectively). This shows moderate use of smartphones might be supportive to academic performance, while excessive use is associated with poorer academic outcomes.

Hypothesis 2: There is a significant difference in students' ability to focus on academic tasks among those who use smartphones for academic purposes, non-academic purposes, and both.

Table 8. Descriptive statistics

Smartphone Usage Type	N	Mean	SD	Std. Error
Educational	93	3.19	1.245	0.129
Non-Educational	22	2.96	1.214	0.259
Both	261	3.22	1.313	0.081
Total	376	3.194	1.289	0.066

Table 9. Test of Homogeneity of Variances (Levene's Test)

Using my smartphone influences my ability to focus on academic tasks.	F	df1	df2	p
	0.701	2	373	.497

Table 10. ANOVA Summary

Source of Variation	Sum of Squares	df	Mean Square	F	p
Between Groups	1.372	2	0.686	0.412	.663
Within Groups	621.455	373	1.666		

Total 622.827 375

Table 11. Robust Test of Equality of Means (Brown-Forsythe)

	Statistic	df1	df2	Sig./p
Brown-Forsythe	.445	2	88.240	.642

The descriptive statistics indicate that students who used their smartphones for both academic and non-academic purposes had the highest mean focus score ($M=3.22$, $SD=1.31$), followed by students who used their smartphones mainly for academic purposes ($M=3.19$, $SD=1.25$), and students who used their smartphones mainly for non-academic purposes ($M=2.96$, $SD=1.21$). This indicates a slight tendency that non-academic users are less concerned about academic tasks. Levene's test indicated that the assumption of equal variances was met, $F(2, 373) = 0.701$, $p = .497$, to test whether these differences were statistically significant. A one-way ANOVA revealed no significant difference in focus scores between the three groups, $F(2, 373) = 0.412$, $p = .663$. The robust Brown-Forsythe test confirmed this result, $F(2, 88.24) = 0.445$, $p = .642$. The descriptive statistics therefore reveal small differences in average focus level between the groups, but not statistically significant ones. This suggests that the type of smartphone use does not have a significant effect on students' academic concentration. Collectively, these results suggest that students' ability to focus on academic tasks does not differ depending on whether they primarily use smartphones for academic vs. non-academic or both purposes.

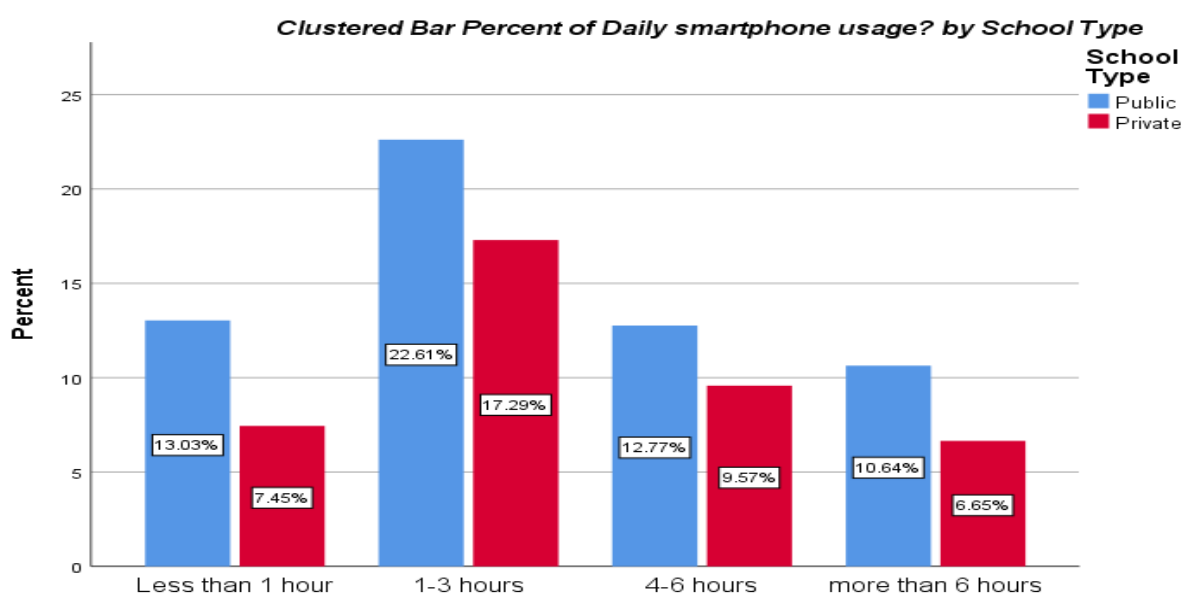


Figure 1. Clustered bar, percent of daily smartphone usage by school type

Figure 1 is a clustered bar chart of the comparison of daily smartphone usage between public and private school students. It can be seen that public school students tend to have more smartphone usage in all categories of time. Both groups reported the most frequent use of smartphones for 1-3 hours per day (22.61% vs. 17.29%), but public-school students consistently reported higher percentages in all categories, including less than 1 hour (13.03% vs. 7.45%), 4-6 hours (12.77% vs. 9.57%), and more than 6 hours (10.64% vs. 6.65%), suggesting a greater overall dependence on smartphones among public school students.

5. DISCUSSION

The purpose of this study was to investigate the impact of smartphone usage on academic performance of high school pupils in Kandahar city. Additionally, the study aimed to determine how smartphones use patterns and purposes relate to academic performance. The findings showed that almost every student had a smartphone and use it regularly, while the frequency and purpose varied significantly. Majority of the students use them outside of the classroom, with only a small portion use them both inside and outside the classroom. Most of participants reported that they frequently used smartphones for both academic and non-academic purposes including studying, accessing social media, and browsing the internet. These results are in line with previous studies that describes smartphones as essential tools for students learning, communication and information access (Mahesh et al., 2016; Thomas et al., 2013; Papadakis, 2018; Gath et al., 2024).

The descriptive analysis shows that students view smartphones as useful learning tools, that allow them to access to educational resources, better understand lessons and study independently. Overall, students acknowledged the benefits of smartphones but expressed moderate concerns about distractions, decreased study time and trouble focusing on studies, highlighting the dual nature of smartphone use. These results are consistent with prior studies that found smartphones have both beneficial and detrimental effects on academic achievement (Campbell, 2005 and Lane et al., 2021). A substantial correlation between grades and everyday smartphone use was found by the Chi-square analysis. While excessive use may be associated with poorer outcomes, moderate use may enhance performance. These findings are aligned with studies which shows that overuse has detrimental effects on academic achievement and the controlled and purposeful use has beneficial effects (Ravizza et al., 2014; Gligor & Mozoş, 2019; Bello & Aliyu, 2022; Glass & Kang, 2018; Grant et al., 2019; Arumugam et al., 2020; Santhi & Rajesh, 2020).

Students who primarily used their smartphones for academic purposes reported being more focused on their studies. Conversely, those who use it mostly for non-academic purposes were slightly less focused. However, using statistical analyses such one-way ANOVA and the Brown-Forsythe test, showed no

significant differences were found in academic focus who used smartphones for academic, non-academic or both purposes. This is aligned with the findings of Ott et al. (2017), who found that secondary students perceive smartphones as both useful and distracting, and Selwyn and Aagaard (2012), who argue that restricting smartphone access alone does not solve learning difficulties, emphasizing the importance of guidance and self-regulation. It supports the findings of Santhi and Rajesh (2020) who found that 12.2% of students used smartphones for academic purposes.

Students from public schools spent more time on their smartphones than students from private schools, but there was no significant difference in academic achievement. This implies that the impact of smartphone is more closely associated with their purpose and use, rather than the amount of time spent or the type of school. Although adverse effects were regarded as moderate rather than severe, students were able to identify the benefits and drawbacks unexpectedly. As Ott et al. (2017) found that smartphones have a paradoxical role that is both beneficial and distracting. This dual role as supportive and distracting is consistent with the findings of researches by (Anshari et al., 2017; Thomas et al., 2013; Scomavacca et al., 2009; Baker, 2018; Gligor & Mozoş, 2019; Ravizza et al., 2014; Kuznekoff & Titsworth, 2013). Students in Kandahar may be learning adaptive strategies to balance smartphone use, made possible by school rules and parental supervision.

The study has several advantages and strengths. It provides original evidence and fresh data from an understudied group of high school students in Kandahar, Afghanistan, a nation with little research has been conducted. Because of the relatively large sample size of 376 participants taken from both public and private schools, the results are more reliable and provide comparative insights between the two types of schools. The conclusions are supported by both descriptive and inferential statistics. However, it is important to recognize some limitations. Cross-sectional design restricts the ability to draw conclusions about causality. Self-reported statistics may contain biases. Furthermore, the study's focus of Kandahar high schools limits its applicability to other contexts or educational levels.

In conclusion, this study shows the widespread use of smartphone among high school students in Kandahar, which offers both potential distractions and educational benefits. It adds to the body of literature by providing new perspectives from the Afghan context. According to the findings of the research, smartphones are neutral tools whose impacts change depending on how they are used. Excessive or inappropriate use may lower performance but educational use can improve motivation and learning. Digital literacy, parental and teacher guidance and clear school policies are essential to ensure that smartphones are used responsibly and efficiently.

6. CONCLUSION

This study examined the relationship between smartphone usage and academic performance among high school students in Kandahar city. The findings reveal that majority of students owned and used smartphones, with moderate disadvantages and as well as some educational advantages. According to the chi-square analysis, daily smartphone use and academic achievement were significantly correlated, indicating that intentional and purposeful use can improve learning results. However, overuse is linked to poorer performance. According to ANOVA results, students who used smartphones primarily for academic, non-academic or mixed purposes did not significantly differ in their academic focus. This suggests that the focus should be on how students manage their smartphone use rather than why they use them.

The research's conclusions offer significant implications for smartphone usage policies and educational strategies. Instead of enforcing broad bans on smartphones usage, schools should promote organized and academically oriented smartphone use while reducing distractions through appropriate guidelines and rules. In order to monitor usage patterns, teachers and parents can play a key role in encouraging appropriate smartphone use, and improving students' digital literacy. By providing data from an unexplored educational setting, this study contributes to the growing body of research on technology use in education. While this study provides valuable insights, its cross-sectional design limits causal interpretations, and the findings may not be generalizable beyond Kandahar City. Future research should employ longitudinal, experimental, or qualitative methods, particularly student, teacher, and parent interviews, to gain a deeper understanding of how smartphone use impacts learning across time and in diverse Afghan educational environments. Overall, this study contributes to the limited body of literature on smartphone use in Afghan high schools and offers practical recommendations for stakeholders to create focused and productive learning environments.

7. Recommendations

1. Schools should create balanced rules and policies to promote academic use of smartphones rather than outright prohibitions
2. To provide students clear guidelines that promote responsible smartphone use during class time and at home, schools should conduct digital literacy programs.
3. Parents and teachers should regularly monitor smartphone usage patterns.
4. For developing comprehensive strategies, policymakers, teachers, and parents should have collaboration.

5. Conduct longitudinal studies to examine the long-term effects of smartphone use on learning outcomes.
6. Undertake experimental studies to establish causal relationships, replicated across other regions of Afghanistan.
7. Carry out qualitative research using interviews with students, teachers and parents for deeper contextual insights.

Conflict of Interest:

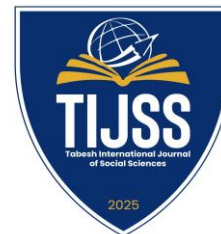
All authors express no conflict of interest in any part of the research.

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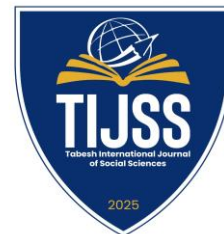
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