Original Article

An Analysis Of Utilization Of Mobile Cellphones, Students' Learning Environment And Students' Performance Outcome İn Higher Education

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Abstract

The cellphone is at the epicenter of a major technological revolution in today's digital culture, one that is having far-reaching effects across many fields. Students' utilization of cellphone has been a topic of study in institutions of higher learning. Previous research on the topic of students' utilization of cellphone and academic performance has largely concentrated on quantifying the effect that students' cellphone use has on their academic performance. The goal of this research is to determine whether or not gender differences and prior exposure to a certain social interactions and learning environment have a role in the adoption of cellphones for educational purposes. A standardized self-report questionnaire was used to gather data from 347 first year students and 254 final year students of the Federal Polytechnic, Ado Ekiti, Nigeria (FPA). Our research is motivated by a desire to answer the following questions about how the utilization of cellphone by students affects their academic performance. Firstly, to investigate the pattern of the utilization of cellphone amongst the students' genders for academic purposes. Secondly, to explore how much of an impact the learning environment has on students' cellphone use in order to improve their academic performance outcome and thirdly how much of an impact the utilization of cellphone has on students' overall academic performance. In conclusion, we believe that a student's decision to use a smartphone for education tasks, partly depends on the student's level of comfort in and understanding of the numerous settings that comprise his or her learning environment. To better understand how students perceive cellphone use, and how that perception influences their academic performance results, we recommend using a range of data gathering methodologies for future study on the association between cellphone utilization and academic performance of students.

Keywords: Cellphone, Students, Learning Interaction, Learning Environment, Academic Performance, Higher Education.

INTRODUCTION

The advent of the cellphone, a highly adaptable handheld computer, has revolutionized the way we communicate and build social connections. The number of cellphone users globally has topped three billion as of August 2020 [1]. The cellphone is the epicenter of a potent technology revolution that is reshaping several industries. The use of cellphones by students has drawn attention in the context of higher education. Prior research has mostly concentrated on cellphone addiction and how it affects students' quality of life [2-4]. Scholarly investigations into this topic have also focused on the connection between cellphone use and academic achievement [5–7]. Previous investigations in this particular research sector produced contradictory results.

According to [8-9], Students' poor grades have been linked to their addiction to their smartphones, namely to their entertainment apps. Other researchers have found that students' learning and engagement are enhanced when they are allowed to use cellphones during classes [5]. This is because students can take advantage of the device's

many features, including the camera, to make notes during class. However, little research has looked into how students' social relationships and learning environments affect their cellphone use for schoolwork. The purpose of this research is to investigate how gender differences and prior exposure to various types of educational environments affect students' utilisation of cellphones for educational reasons.

LITERATURE REVIEW

In our modern digital age, the utilization of cellphones in higher education has skyrocketed. Students in higher education institutions can't live without their cellphones because they are digital natives. Recent surveys have shown that undergraduates whose ages ranges within the age bracket of 18 - 24 use their mobile devices an average of 214 times every day [10] and access them 1500 times per week. As a result of the recognition that digital natives are also students, a plethora of educational apps have been created to meet their demands [11]. According to [7] in South Korea, 99% of college students have cellphones. Having a nice cellphone with a variety of intriguing features was also a popular trend among students because it allows for the use of several functions whenever and wherever it is needed.

Scholarly interest in the correlation between utilization of cellphone and students' performance in the classroom has been on the rise over the past decade, as seen by the proliferation of relevant papers. However, these studies present contradictory findings from various contexts. According to a study done by [12], for example, the majority of the research that has been conducted up to this point has focused on the widespread worry that the usage of cell phones in academic institutions can create problems. The utilization of cellphones distracts and interferes with students' academic work because it gives room for them to combine their roles with those of others things. Numerous activities, such as social media networking, downloading learning materials, studying learning materials, text messaging during lectures and contacting classmates and lecturers for educational discussions, have been outlined in prior studies as common use of students' cellphones in the regard of the way it adds to student learning and performance outcome.

Analysis of student cellphone use for these activities has linked it to poor class performance outcome in previous researches because it reduces the desire to finish academic tasks. It has been argued [13–15] that a wide variety of entertainment apps and social media networking activities, such as watching movies, playing games, or messaging, might disrupt concentration and increase laziness. The multitasking capabilities of cellphones are frequently blamed for the link between cellphone use and subpar academic performance. Multitasking on a cellphone has been linked to a decline in academic performance, according to Rosen et al. [16].

A study by [17] among American college students also found a negative correlation between social networking site use and GPA, which was attenuated by multitasking. Using students' texting patterns as a proxy for cellphone usage, [18] discovered that during a six-minute lecture, students spend, on average, 2.69 minutes messaging instead of paying attention. Students who sent or received messages during class performed 27% poorer on a quiz, according to the same study. Cell phone addiction, brought on by excessive use for purposes such as social networking and texting, can also have a negative impact on a student's ability to focus in class. Studies on students in higher learning institutions in Africa continue to demonstrate the opposite expectation of improved academic performance among students, despite the fact that cellphones are designed with several functionalities that students can use to obtain any content they require to improve their academic work. University students in Tanzania, Kibona, and Mgaya were surveyed about their usage of cellphones [19], and the results showed a correlation between heavy cellphone use and poor academic performance.

Many studies have used the media multitasking theory to examine how the utilization of cell phone affects students' schoolwork. The term "multitasking" comes from the phrase "divided attention and nonsequential task switching for ill-specified operations as they are done under learning conditions," as defined by [20]. When investigating the relationship between multitasking and academic achievement, [21]'s presentation of a cognitive theory of multimedia learning is useful. They argue that people have a limited ability to remember and process information from a variety of sources. This limitation means that students need to engage in substantial cognitive processing to organize their learning materials into a coherent framework and integrate them with their existing body of knowledge. Students now have access to a new kind of learning environment made possible by the proliferation of cellphones [22]. It's also possible to multitask by switching between different tasks. The cell phone's multitasking environment allows for frequent switching between activities, which can be distracting and inhibit learning. Task switching, which interrupts learning, is widely acknowledged as a possible cause of memory failure [23], much like the cognitive model outlined previously.

Scholarly investigations have also highlighted the beneficial effects of the utilization of cellphone on students' academic achievement. Recent research found that students who used cellphones in school had higher GPAs. The research found that students who use their cellphones for educational purposes more regularly are more likely to perceive and experience this favorable impact on their academic performance[6]. The same conclusion was drawn by [5], who found that while entertainment apps appear to harm students' academic performance, generally cellphone applications, MMS, SMS, and lightning-fast processing have a positive and affirmative effect on students' academic performance in higher education.

While some research has found a correlation between cellphone use and improved academic achievement, other studies have found no such link. One-fifth of undergraduate medical students in India are addicted to their cellphones, although there is no clear link between cellphone use and academic achievement, according to a new study [24]. Similarly, students in Louisiana, USA, who were receiving agricultural education in the classroom found no statistically significant difference in their academic performance whether they utilized cellphones or traditional textbooks [25]. Therefore, [26] proposed that a student's or learner's digital aptitude significantly determines the favorable effect of cellphone use for academic purposes. Because of the favorable effect that students' use of mobile devices has on their academic performance, they confirmed that students who are technologically savvy are more likely to succeed.

Context of the Research

Neither the gendered perspectives of cellphone usage nor the gender variations related with utilization of cellphone for learning have been explored in depth in the previous study on the correlation between the utilization and academic performance. Numerous academic studies have been conducted on the topic of gender differences and cellphone use; however, most of these have centered on the gender preference of cellphones and its utilization [27], the occurrence of the addiction cellphone utilization and the related consequences of cellphone addiction in both male and female students [28], or the gender differences in the association between utilization of cellphone and mental health [29].

The impact of cellphone use on students' academic performance often overlooks another important factor: the students' perceptions of the classroom setting. Learning environments are places and situations that facilitate the transfer of theory into practice [30]. A learner's involvement in the learning process is shaped and supported by a variety of situations and connections [31]. The amount of years a student has spent at a given university has a significant bearing on this, as does the student's general familiarity with the university's culture. By virtue of having the wherewithal to adapt to the numerous contexts and settings that define the learning process, one's prior experience in a given learning environment presupposes one's prior knowledge, mental posture, and disposition. The amount of years a student spends in a certain classroom at a given university determines the depth of that student's familiarity with that classroom.

This research was produced as a result of survey carried out in a Nigerian higher institution. While there is undoubtedly a lack of research on the relationship between the utilization of cellphone and students' academic performance in Nigeria, it is crucial to comprehend the mechanisms underlying this relationship as well as how the cellphone's technological advancements can be effectively used to enhance student learning. According to a study by Lesitaokana [33], cellphone use and subscriptions have grown over time since they first became popular in Nigeria roughly twenty years ago. The rise in Internet access and usage is paralleled by the rise in mobile subscriptions.

Research Objectives and Research Questions

Our study focused on three primary goals because, based on our analysis of the research gaps in the current literature on the connection between the utilization of cellphone and the performance outcome of students:

(1) To investigate how students' utilization of cellphones for learning activities varies by gender. In this regards, an hypothesis was put up to demonstrate a correlation between gender and the utilization of cellphones for educational purposes, such as accessing social networks, downloading and reading lesson materials, and contacting classmates and lecturers for help.
(2) To evaluate how using a cellphone in a learning setting contributes to improving academic performance of students. Therefore, an hypothesis was proposed to show if there is a relationship between the year of study and the utilization of cellphone for reading and downloading course materials as well as corresponding with classmates and lecturers for educational purposes.
(3) To examine how student performance outcomes are impacted by the use of cellphones. In light of this purpose, an hypothesis was proposed in order to show a correlation between using a cellphone to download and read course materials and students' performance outcomes in terms of grade point average (GPA).

The following research questions are the main emphasis of this article in light of the three aforementioned overall objectives:

i. RQ1: How do gender-related differences impact the utilization of cellphones for learning?
ii. RQ2: In respect to cellphone use and academic performance, what is the contributing impact of the experience in a specific learning environment?
iii. RQ3: How much of an impact does the use of cellphones make in the students' academic performance?

RESEARCH METHODOLOGY

This study used a descriptive quantitative research design because it wanted to describe how students use their cellphones in relation to their academic performance and how the learning environment affects the way they use their cellphones for academic purposes. Identifying the attributes of a person or a group are part of descriptive

study. Self-report questionnaires were used to administer the data collection for this investigation. Demographic factors, which refer to details about particular participant characteristics, and closed-ended questions, which only allowed respondents to choose from the provided alternative answers, made up the study questionnaire [34].

601 first-year students from the Federal Polytechnic in Ado Ekiti, Nigeria (FPA) participated in this study. According to what was stated earlier, the research on the relationship between the utilization of cellphones and academic performance neglected to take into consideration the experience of being in a learning environment. In order to close this information gap, we incorporated the experience of being in a learning environment as one of the dimensions into the design of the study. For the purpose of making it simpler to assess this quality, the research subjects for this study consisted only of undergraduate students who were either in their first or fourth year of university. The research involved the participation of 254 undergraduate students in their final year and 347 first-year students from four different faculties. The selection of first-year students was made with the knowledge that they had only just made the transition from secondary to higher education settings, and hence had no prior experience with a different style of teaching and learning. Students in their final year of college also participated in the study since they had a solid grasp of the norms and expectations of the higher education system. Participants in this study were recruited using a systematic random sampling technique. This study's poll was conducted from May through July 2022, during the spring semester of the 2021-2022 school year. Participants were assured their privacy and confidentiality would be protected and that their participation was completely optional. Permission to participate in the study was sought from respondents in a dedicated section of the questionnaire.

RESULTS

The research findings are presented in this section in accordance with the study's goals, hypothesis and research questions. The primary aspects of the data and the salient traits of the study participants were highlighted using descriptive analysis. As a result, frequency calculation or percentage distribution are used in the presentation of the study's findingsTo analyze the correlation between certain variables, Pearson's chi-square test was used. Independent factors could consist of things like gender or year in school. The outcomes of interest were the dependent variables of students' utilisation of cellphones for social networking, downloading and reading educational resources, and getting in touch with classmates and teachers for academic support. Furthermore, we examined the connection between the utilization of cellphones and academic achievement with reading and downloading learning resources as independent variables, and students' cumulative grade point averages (CGPAs), which served as the performance outcome.

i. Distribution and Features of Study Participants

The demographic details and distribution of the study participants are shown in Table 1. The Federal Polytechnic in Ado Ekiti, Nigeria, provided the sample of 601 students from which this study's data were drawn. 254 (42.3%) fourth-year students and 347 (57.7%) first-year students are both included in the sample. Participants were divided into 278 men (46.3%) and 323 women (53.7%), respectively. The respondents' ages ranged from 15 to 36 years and beyond, with the majority (32.9%) lying within the age range of 21 to 25 years, followed by the age range of 15-20 years (25.3%) and the age range of 26 to 30 years (18.2%). Additionally, the age group between 31 and 35 years (14.6%), and the age group between 36 and above (9%), were followed. The study's participants were students in a variety of faculties, including the School of Business Studies (SBS), which had 202 participants (33.6%), the School of Science and Computer Studies (SSCS), which had 179 participants (29.8%), the School of Engineering (SOE), which had 118 participants (19.6%), and the School of Environmental Studies (SES), which had 102 participants (17%). The decision to include students from various academic disciplines was motivated by the aim to have a comprehensive understanding of the phenomenon under research.

Table 1: The Participant's Bio-demographic Features

Gender	**Frequency**	**(percent)**
Male	278	46.3
Female	323	53.7
Total	601	100
Age (Years)	**Frequency**	**(percent)**
15-20	152	25.3
21-25	198	32.9
26-30	109	18.2
31-35	88	14.6
36 & above	54	9
Total	601	100

Year of Study	Frequency	(percent)
First year	347	57.7
Fourth year	254	42.3
Total	601	100
Faculty	**Frequency**	**(percent)**
SBS	202	33.6
SSCS	179	29.8
SOE	118	19.6
SES	102	17
Total	601	100

ii. Cellphone Utilization and Gender

Using the pre-existing literature and past scholarly studies, this investigation identified numerous primary applications of cellphones among students, which allowed for an evaluation of the relationship between the utilization of cellphone and academic achievement. Some examples of this kind of usage are social networking, downloading and reading course materials, and communicating with teachers and peers for research or study. The questions in the self-report questionnaire are structured around these established facets of the use of cellphones. We therefore postulated that there is a correlation between gender and the utilization of cellphones for educational reasons such as social networking, course material download and reading, and communication with peers and teachers.

Students appear to be using cellphones for social networking on a variety of social media and social networking platforms. This study discovered that 82.1% of the students who participated in the study (n=601) admitted to using their cellphones for social networking. Male and female participants did not differ significantly in terms of their usage of cellphones for social networking, with 79.4% of male students and 81.1% of female students reporting the utilization of cellphones for social networking. The link between gender and cellphone utilization for social networking was examined using Pearson's chi-square test. The test result indicated that there is no significant correlation ($p > 0.005$) between the two variables. As a result, we disproved the hypothesis that there exist a relationship between the utilization of cellphone for social networking and gender.

Previous research has shown that two common cellphone activities includes downloading and studying lesson materials. According to Table 2, pertaining these cellphone activities, 76% of the students indicated that they used their cellphones for downloading course materials while 74.15% confirmed that they used their cellphones for studying the course materials. However, it indicated that a slightly larger percentage of female participants (approximately 7%) downloaded and read the lesson materials on cellphones. Pearson's chi-square test verified the strong association between gender with both downloading course materials ($p= 0.010$) and reading course materials on a cellphone ($p= 0.021$). Here, we accepted the hypothesis that there is a gender difference in the utilization of cellphone for reading and downloading course materials.

Table 2: Crosstabulation of cellphone use for downloading and reading course materials self-rating by gender (*n* = 601).

Cellphone Use		Male ()	Female (%)
For course materials downloads	No	27.6	20.4
	Yes	72.4	79.6
For studying course materials	No	29.2	22.5
	Yes	70.8	77.5

According to academic studies, students frequently use their cellphones to get in touch with their peers and professors for help with their assignments. We used five response options to analyze the factors associated with utilizing a cellphone to get in touch with classmates and professors for academic support: "never," "rarely," "occasionally," "frequently," and "often." As regards asking for academic help from peers and lecturers, the survey found that 47.3% of participants had "never" contacted their professors, while about 1.5% said they "never" asked their classmates for help with their academics.

Similar to this, 51.9% of students stated that they "always" contacted their peers, whereas just 5.2% of participants used a cellphone to get in touch with their professors. This research showed that, in contrast to their peers, students typically only contacted their lecturers using cellphones when necessary for their academic demands or when their peers were unable to adequately answer their academic questions. This finding applies to all respondents, male or female. This conclusion was supported by a statistical test, as our Pearson's chi-square test showed that there was no significant difference between male and female participants' interaction with professors or peers for academic help ($p= 0.311$). Consequently, we disproved the hypothesis that using cellphones

to contact classmates and professors for academic help is associated with gender. An overview of the hypothesis of this study related to cellphone Utilization and Gender and its results can be found in Table 3.

Table 3: The Findings and Outcome of Hypothesis 1 (H1) to Hypothesis 3 (H3) as related to Cellphone Utilization and Gender

Hypothesis	**Findings**	**Outcome**
H1: There is a correlation between gender and whether or not they utilize their cellphone for social networking.	About 81% of female students and over 79% of male students have used a social networking app on their cellphones	Since there is no statistically significant correlation between gender and the utilization of cellphones for social networking, hence H1 is rejected.
H2: There is a correlation between gender and the utilization of cellphones for the purpose of downloading and reading study material.	Female participants downloaded and read lesson materials on cellphones 7% more than male participants.	Since there is a statistically significant correlation between male and female students' utilization of cellphones to download and study lesson materials, hence H2 is accepted.
H3: There is a correlation between gender and the utilization of cellphones to communicate with classmates and teachers for the purpose of obtaining academic support.	Students reached out to their respective lecturers. using mobile devices only when it's necessary. They were forced to do so because of academic requirements or when their colleagues were unable to provide suitable replies to their classroom questions and concerns queries.	Since there is no statistically significant difference between male and female students in their tendency to seek out academic help from professors or colleagues, therefore we reject H3.

iii. Participants' year of study and Use of cellphones

This study is notable because it examines the connection between the utilization of cellphones and performance outcome of students while also factoring in participants' prior exposure to a school environment as an important variable.

In this analysis, a student's time spent in higher education is transformed into experience in a learning environment. Because of the fundamental assumption, that the 4th year undergraduate students are more likely to have had experience learning in a university setting than the 1st year students, we decided to limit participatants to first and fourth year undergraduates only. Since both groups' experiences in the higher education learning environment are different, measuring how students use cellphones for academic purposes is likely to provide new perspective to this research topic. Therefore, we postulate an hypothesis that there is a relationship between the students' year of study and their utulization of cellphone for social networking, reading and downloading learning materials and reaching out to lecturers for academic purposes.

Table 4 presents a crosstabulation of the ways in which students use their cellphones for social networking, downloading, and studying lesson materials, broken down by academic year. The survey found that first-year students were more likely than fourth-year students to use their cellphones to access social media platforms for the purpose of social networking. In fact, 86% of first-year students said that they do so, while only 70.1% of fourth-year students said the same thing. Pearson's chi square test was utilized to investigate the correlation between the students' year of study and their utilization of cellphones for social networking. The test indicated a statistically significant correlation between the two variables (p 0.001). It is generally accepted that the year of study correlates with the utilization of cellphone for social networking. According to the findings, fourth-year students, despite also using social media platforms for social networking, paid more attention to learning activities than their first-year counterparts.

Table 4: Crosstabulation of cellphone use for downloading, reading course materials and social networking self-rating by study year (n = 601).

Cellphone Use		**First year ()**	**Fourth year (%)**
For course materials downloads	No	40.6	37.3
	Yes	59.4	62.7
For studying course materials	No	55.3	14.6
	Yes	44.7	85.4
For Social Networking	No	14	29.9
	Yes	86	70.1

This study discovered that there is only a slight difference between first-year and fourth-year students when it comes to using cellphones to download learning materials, with 59.4% of first-year students and 62.7% of fourth-year students admitting to doing so. Furthermore, a chi-square test (p =0.370) showed no correlation between the study year and cellphone learning material downloads. In this instance, we disproved the hypothesis that the level or year of study is related to cellphone use for downloading learning material.

The use of cellphones to read course materials appears to be related to the level or year of study, as opposed to downloading course materials. According to our research, 85.4% of 4th year students read course materials on their cellphones, while only 44.7% of 1st-year students used cellphones for the same purpose. The use of a cellphone to read course materials is significantly correlated with the year of study, according to the Pearson chi-square test (p= 0.001). This result supports the hypothesis that there is a correlation between the year of study and utilizing a cellphone to read learning materials. This is a notable discovery because it shows that, in contrast to first-year students, fourth-year students prefer to study their course materials using a variety of available tools, including cellphones.

The regularity with which students seek academic aid from professors is influenced by their familiarity with the learning environment. In the context of this study, we investigated if the academic year affected how students approached their instructors for help with their assignments. When the study year is taken into account, the poll indicated that 28.6% of fourth-year students said they "often" or "always" approached their instructors for academic help. Only 13.1% of first-year students responded in the same manner. Similarly, fourth-year students exceed first-year students by 20.2% among those who said they "occasionally" contacted their instructors for academic support. Therefore, it may be inferred that fourth-year students with greater experience likely to approach lecturers for academic help more frequently than first-year students. In other words, the student's experience of a higher learning environment appeared to have an impact on the behavior of contacting professors via a cellphone for academic support. The relationship between the year of study and cellphone use to get academic help from instructors was examined using a Pearson chi-square test. The connection was verified by the test (p =0.001). Therefore, we agreed with the hypothesis that the usage of a cellphone to contact lecturers for academic support is related to the year of study. An overview of the hypothesis of this study related to participants' year of study and utilization of smartphones and its results can be found in Table 5.

Table 5: The Findings and Outcome of Hypothesis 4 (H4) to Hypothesis 6 (H6) as related to Participants' year of study and Utilization of cellphones

Hypothesis	**Findings**	**Outcome**
H4: There is a correlation between the student's year of study and the utiization of cellphones for social networking.	Students in their first year utilized cellphones for social networking at a rate that was higher than students in their fourth year.	There is a statistically significant correlation between the student's year of study and the utiization of cellphones for social networking, hence H4 can be accepted.
H5: There is a correlation between the student's year of study and the utiization of cellphones for downloading and studying lesson materials.	About 85.4% of 4th year students read course materials on their cellphones, while only 44.7% of 1st-year students used cellphones for the same purpose.	Since there is a statistically significant correlation between the student's year of study and the utiization of cellphones for downloading and studying lesson materials, hence H5 is accepted.
H6: There is a correlation between the student's year of study and the utiization of cellphones to communicate with classmates and teachers for the purpose of obtaining academic support	The fourth-year students have a higher tendency to approach lecturers for academic help more frequently than first-year students	Since there is a correlation between the student's year of study and the utiization of cellphones to communicate with classmates and teachers for the purpose of obtaining academic support, therefore we accept H6.

iv. Use of Cellphone and Outcome of Performance

How the use of cellphones affected students' academic performance was one of the goals that motivated this study. We examined this by focusing on the performance outcome as determined by the cumulative grade point average (CGPA) and the utilization of cellphones for downloading and reading course materials. In this situation, we proposed an hypothesis that shows the correlation between reading and downloading course materials and CGPA. We examined students' current CGPAs and cellphone usage trends to aid with the analysis. FPA uses a scale of 0 to 5 to determine GPA. During the data gathering process, we divided the CGPA into the following four categories: "less than 2.5," "between 2.5 and 3.49," "between 3.5 and 4.49," and " 4.5 and above." A majority of 60.1% of the 601 participants said that their present CGPAs fell between 2.5 and 3.49, while CGPA of 17.3% of

the participants was less than 2.5 and only 8% of the participants said that their present CGPAs is between and 3.5 and 4.49 and 3.3% confirmed that their present CGPAs was 4.5 and above.

A comparison of cellphone use for social networking and CGPA revealed that students' use of cellphones for social networking significantly affected their CGPA. When the analysis was limited to individuals who said they used their cellphones for social networking, the same outcome was attained. According to the study's findings, most of the time, using a cellphone for social networking interfered with the specified time students often set aside for self-study. To support this assertion, however, further investigation is needed. Two typical cellphone behaviors that are closely related to students' performance outcomes are downloading and reading course materials. When the act of using a cellphone for downloading course materials was directly compared to the CGPA variable, the findings demonstrate that there was a significant difference as pertaining the achieved CGPA between those who claimed to have used a cellphone to download course materials and those who did not. Using a cellphone to access study materials had a statistically significant impact on CGPA, according to Pearson's chi-square test ($p=0.001$). As a result, the hypothesis that there exist a relationship between utilizing a cellphone to download course materials is related to CGPA is accepted.

About 60.6% of participants claimed to read learning material on a cellphone. In this category, 30.3% reported that their present CGPA fell within the 2.5 and 3.49 while 15.1% reported that their present CGPA fell less than 2.5 and 12.5% reported that their CGPA was between 3.5-4.49 ranges and 2.7% has a CGPA of 4.5 and above. Nevertheless, presumably, a strong CGPA should be anticipated among students who had time to read their learning material, including reading them on a cellphone. This logical claim can be supported by the probability distribution of the CGPA when the differences in students' intellectual capacities are taken into account. Comparative research showed that those who studied the course materials on their cellphones appeared to have better performances than the students who did not study. For instance, those who read course materials on a cellphone outnumbered those who did not among the participants who earned a CGPA between 2.6 and 3.5. and then we have a large percentage of those who did not use their cellphones to study the learning materials and those are the students that their CGPA is less than 2.5. These results thus imply that, to a certain extent, the utilization of a cellphone to read course materials has a beneficial impact on the CGPA results. A substantial correlation between using a cellphone to read course materials and CGPA was established by Pearson's chi-square test ($p= 0.001$). Therefore, we agreed with the hypothesis that there is a connection between students' performance outcomes and their use of cellphones to read course materials. An overview of the hypothesis of this study related to utilization of cellphone and outcome of performance and its results can be found in Table 6.

Table 6: The Findings and Outcome of Hypothesis 7 (H7) related to Use of Cellphone and Outcome of Performance

Hypothesis	**Findings**	**Outcome**
H7: There is a correlation between utilizing cellphones to read course materials and performance outcomes (CGPA).	Students who studied lesson materials utilizing their cellphones appeared to have better performance than the students who did not.	Because there is a substantial correlation between the utilization of cellphones for reading course materials and the overall performance of students, H7 is therefore be validated and accepted.

DISCUSSION

In earlier studies [35-37], social networking was shown to be the activity that cellphone users engaged in the most frequently among students. We found that 78.1% of the 601 participants who took part in the study utilized their cellphones for social networking, which supported findings from other studies. Modern technological advancements in cellphones allow for the integration of multiple social media channels into a single device. Despite the fact that there could be a gender disparity in the actual use of social media networks [38], this study found no significant connection between gender and students' utilisation of cellphones to access social media networks. Incorporating the student's level of education as an analytical dimension in this study field through the use of year of study as a variable, this research represents a novel approach and contribution to the existing literature on the topic of student utilization of cellphone and performance outcome. The findings shows that fourth-year students are more likely to use their phones to acquire study material and communicate with their teachers for aid with their studies than the first-year students.

Because of this, one may claim that a student's familiarity with or understanding of the various settings that define his or her learning environment has a role in the student's decision to use a cellphone for academic reasons, including the enhancement of performance outcomes. This reasoning is in line with the widely held belief that a well-designed learning space can help students become more invested in their studies and produce better results overall [39].

One of the primary actions in the learning process is reading the course materials. Cellphones opened up new ways for learners to access educational resources. According to this report, the two most common uses of cellphones among students are for downloading and reading course materials, this discovery is consistent with the

research by [40] and [41]. They discovered that students frequently view cellphones as being very helpful tools for their academic work since they give them access to course materials, library catalogs, class documentation, and peer conversation about their coursework. However, this study makes a significant discovery on gender and cellphone access to course materials: more female students than male students download and read course materials on their cellphones, according to the study. The search of the literature failed to turn up any earlier studies that looked at how gender differences affected using a cellphone to access academic information. While earlier research simply identified a gender difference in social networking site use [35], our study's findings may have implications for the development of academic motivation. For instance, prior research examining gender differences in academic motivation and classroom behavior found that female students often exhibit a higher level of academic enthusiasm and behavioral involvement in their schoolwork compared to their male peers [42, 43].

This research highlights the fact that smartphones are helpful for education since they provide students with additional channels via which to gain access to and study learning material, approach teachers for assistance, and communicate with classmates about homework [44]. The usage of a cellphone for both social media networking and academic purposes is a clear example of multitasking. However, as this study showed, a cellphone's direct impact on the level of academic performance outcome in terms of cumulative grade point average (CGPA) appears to be indirect. While using a cellphone may have a direct or indirect impact on a student's academic performance, there are a variety of other factors that can affect academic performance results. This covers, among other things, academic belief systems or confidence and learning styles, as well as learning settings and support systems, socioeconomic circumstances and student dedication, and academic goals [45].

CONCLUSION

This study centered on looking at the gender and trends of utlizing the cellphone for academic reasons, evaluating the relevance of the learning environment's experience in leading to the utilization of cellphone for academic reasons, and looking at how much the use of cellphone affects academic performance of students. An overview of the hypothesis of this study and results can be found in Tables 3,5 and 6. This study's first research question explores how disparities in gender affect cellphone use for education. This study found that 78.1% of the students who participated in the study regularly used their cellphones for social networking. Almost 79.4% of male students and 81.4% female students reported using their cellphones for social networking, suggesting no substantial difference between the sexes. Students' multitasking behavior is evident in their use of cellphones to access social media and course materials. An important finding from this study is the relationship between gender and the use of mobile devices to access course materials. The study indicated that more female students than male students regularly use their cellphones to access course materials. Academic drive may be fostered by this approach, as previous study has demonstrated that female students generally have a higher level of academic desire and behavioral involvement in their academic work than their male counterparts.

This research adds a new dimension to the investigation of the relationship between cellphone use and academic achievement by considering the context of classroom instruction as a variable. To answer the second research question, we considered how classroom context affected cellphone use for educational purposes. In this analysis, the length of time spent in a college or university setting is equated with a student's level of academic experience. The findings showed that upperclassmen (those in their fourth year of college) are more likely to use cellphones than freshmen for reading course materials, sending and receiving text messages during class, and contacting professors for help with their coursework. Therefore, we contend that a student's familiarity with and understanding of the various settings that create his or her learning environment play a role in the student's decision to use a cellphone for academic purposes. The impact of student cellphone use on learning and academic results is the focus of our third research question. The use of cellphones to read course materials contributes positively to the performance results of students, as evidenced by a comparison of cellphone use and the cumulative grade point average (CGPA). This study reinforces the understanding that cellphones are beneficial for educational reasons, since they provide students with additional options for accessing and reading course materials, which in turn contributes to their academic success.

There are a number of limitations to this research. The results of this study were interpreted with the understanding that the participants were truthful and dependable in their responses to the self-report questionnaire utilized for data collection. Moreover, just one method of data collecting was used in the study. Despite the fact that the self-report questionnaire's questions were designed to cover the study's aims, additional questions were not solicited or welcomed. Using a self-report questionnaire as the only means of collecting data eliminates the potential of conducting in-depth interviews with participants. We recommend using multiple data collection technique, including in-depth interviews, for future research on the topic of utilization of cellphone and academic performance, in order to understand how students assign meaning to cellphone use and the role that cellphone use plays in improving academic performance outcomes.

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