



The impact of smartphones on undergraduate students in the faculty of education, University of Port Harcourt

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Article Info

ISSN (online): 2582-7138

Volume: 05

Issue: 02

March-April 2024

Received: 12-02-2024;

Accepted: 14-03-2024

Page No: 414-420

Abstract

Smartphones give students access to whatever data or information they may need at any time or location, which makes studying more accessible and eliminates potential learning barriers. As a result, learning is more enjoyable. This study looked at how cellphones have impacted undergraduate students at the University of Port Harcourt's college of education using a descriptive survey research methodology. The study's focus was the Faculty of Education at the University of Port Harcourt. The population of the study consisted of 188 first-year students in the human kinetics and health education program at the University of Port Harcourt's Faculty of Education. 120 students made up the study's sample. A standard random sample procedure was used for the inquiry. This study used a structured questionnaire to collect information from participants. Both face validity and content validity were used in the study. A reliability coefficient of 0.72 using Pearson Product Moment Correlation was determined. The mean and standard deviation were used to respond to the study questions, and the Z test was used to evaluate the hypotheses at the 0.05 level of significance. According to the report, in addition to using applications to assist them with assignments or homework, students can use websites to obtain materials for their studies. Smartphones also provide a range of engagement options that may be tailored to the preferences of each user. It was suggested that school officials ensure smartphones are used in the classroom to facilitate paperless communication in light of the findings.

Keywords: Smartphones, educational technology, collaboration, cooperation, digital devices, classroom

Introduction

The smartphone, which has changed how we view mobile phones and what they can do, is one of technology's greatest inventions. Numerous lives have surely been impacted by the role that smartphones have played in the sphere of education (Tejaswini, 2019) ^[28]. Technology used in education makes sure that everyone develops, employs, and manages technology to enable everyone to learn. Understanding the part that educational technology plays in society at this time is crucial.

For the reasons outlined below, smartphones should dominate the education sector:

- Acquiring knowledge whenever and wherever you want: Its name is clear: a mobile. This considerably improves the convenience of the student while also simplifying studying. It is easy to complete assignments as they arise, take notes in class, and continue studying after class has concluded (Mehdi, Sarvestani, & Sahar, 2020) ^[17].
- Favoritism is accepted: All of your content is in the palm of your hand. You can use the content on your smartphone in a variety of ways. A student who wants to study from a book might select an online textbook, but a visual learner would choose an interactive path to understand visual facts, such as the geographical features of a certain continent. By providing students with a range of approaches to comprehend a certain subject based on how they choose to learn, smartphones can aid in their understanding of this idea (Muhammad, Mohammad, Masitah & Danang, 2017) ^[20].

- Moving judgments: It takes the instructor a lot of time to grade the tests and homework that a class of 30 students submits. One of the primary features of mobile learning is the capability for a teacher to grade pupils remotely using a tablet or other mobile device and evaluate a student's progress using the real-time data received. This facilitates the teacher's ability to identify students who are falling behind and assist them with their assignments (Ahmad & Mohammad, 2020) ^[1].
- You can ask an instructor for help: Students can utilize mobile applications to not only find out the answers to the questions they have about their classes, but also to use a Virtual Assistant to learn much more about a certain topic. The student can use a mobile application to ask a virtual assistant a question about any of the topics they have enrolled for, and the assistant will respond with the information they need, including references for more clarification. This can be used at any time of day, but after class is when students find it most useful (Morris & Sarapin, 2020) ^[18].
- Collaborating and working together: A smartphone can be used for things besides schoolwork. They also aid students in acquiring vital life skills like cooperation and teamwork. Students may quickly form groups to work on projects or conduct research with the aid of mobile applications, which also instills in them the virtue of collaboration. Team building skills are equally as important as the skills required to specialize in any industry (Nazime, 2016) ^[22].

There is always debate about whether or not to allow students to use their smartphones in class. Accepting cell phones begs the fundamental query of whether or not they will soon be able to replace a teacher. The position of a teacher has emotional value in the setting of a classroom. Although data obtained directly through mobile applications is utilized to provide facts and figures, these applications are not suitable for offering guidance and assistance. If there were no skilled professionals to supervise activities and guide pupils in their judgments, technology would not evolve. Instructional technology was built on the idea of a perfect teacher (Kwadwo & Jacob, 2019) ^[13].

Literature Review

One disadvantage of bringing digital devices into the classroom is the possibility of immoral activity taking place during class, which might make supervising the class difficult. It should go without saying that technology plays a significant role in the life of the younger generation and helps them learn new things and develop their abilities more quickly. A learning environment that is lively, enthusiastic, and safe must be promoted by an institution (Md, Mohammad, Mohammad & Md, 2017) ^[20]. Everyone cannot avoid using or possessing a mobile phone because they are so important in every aspect of a person's life. The development of information and communication technology (ICT) has enhanced how education and learning are performed at various tertiary institutions, even though it is possible that practically all of the students and instructors in a learning institution have cellphones (Tamilla, 2018) ^[27]. Thanks to ICT, information required for teaching and learning is easily accessible. Just a few benefits that ICT may offer include better communication, information access, knowledge exchange, and more student-lecturer cooperation (Mtega,

Bernard, Msungu, & Sanare 2012) ^[19]. This tactic benefits both groups of people because lecturers and tutors do not have to be on campus to deliver their classes. Additionally, mobile phones make it simple for students who live distant from schools or in remote locations to continue their education. Mobile devices and internet access allow them to stay connected to their students' education no matter where they are. Although most students use their smartphones for social networking, gaming, and photo-taking, they can also be used for academic purposes. According to Sumathi, Lakshmi & Kundhavai (2018) ^[26] opined that as mobile phone technology develops, it will be good for student performance and learning. Tertiary education is where it is most frequently employed because of its adaptability and ability to enhance educational and learning processes (Fahad, 2018) ^[8]. Learning and teaching have improved as a result of information sharing, increased online information exploration, communication, and increased involvement between lecturers and students. Because of this, implementing new technologies in higher education requires more than just accepting technological advancements; it also necessitates developing guidelines, training all parties involved, and making sure that the required tools are available (Bulus, 2020) ^[4].

Dulanjali (2023) ^[7] claims that smartphones have fundamentally altered how people study. Mobile device use by teenagers increases their chance of being addicted to their phones. Additionally, it can be detrimental to their health. It's horrible that mobile devices may so easily obstruct a teen's education. Overuse of smartphones among students could have unfavorable consequences. Justice Yao, Kwado, Jacob, & Evans (2019), found that health trainees who do not use smartphones in their learning activities has negative attitude towards learning. Chathuranga & Jaysundara (2020) ^[5] argue that the majority of respondents have used their smartphones to access social media applications, and web browser is identified as the most frequently used mobile application for learning. To Navpreet (2018) ^[21], mobile phone usage affect the academic performance of students as they stuck to this device during their classes, also mobile phone usage has become an addiction among young students. Nehra & Rajesh (2022) ^[23], opined that excessive smartphone usage by adolescents negatively impact their academic performance. Aloteibi (2022) ^[2] opined that teachers who have stronger negative belief concerning how smartphones affects students socially, psychologically, and academically typically set a stricter classroom smartphone policy.

Statement of the Problem

The smart phone app stores offer a wide variety of instructional apps for students at various academic levels. This implies that a student can use a particular app to seek help with a subject they are struggling with. The majority of this software can be downloaded for free. Some of them, nevertheless, might require a one-time fee to access. The widespread use of smartphones is proof that it affects students' academic performance. The use of cellphones often prompts inquiries about whether this addiction affects students' performance negatively or favorably. The majority of university students, particularly undergraduate students, were impacted by the growth of mobile phone technology as well as their desire for and pursuit of new technological developments. The impact has an impact on the kids' academic performance, both positively and negatively. In

order to understand how smartphones affect college students' daily life, this study examined how they impact undergraduate students in the faculty of education at the University of Port Harcourt.

Aim and objectives of the study

The aim and objectives of the study is to investigate the impact of smart phones on undergraduate students in the Faculty of Education, University of Port Harcourt. Furthermore, to address the research objectives and tackling the problem statement, the following research questions were explored:

1. Examine the positive impact of smart phone usage in classroom by undergraduate students in the Faculty of Education, University of Port Harcourt
2. Identify the negative impact of smart phone usage in the classroom by undergraduate students in the Faculty of Education, University of Port Harcourt
3. Investigate the attitude of undergraduates' students using smart phones in the classroom in the Faculty of Education, University of Port Harcourt

Research Questions

Based on the aim and objectives of the study the following research questions were drawn;

1. What are the positive impacts of smartphone usage on undergraduate students in the Faculty of education, university of Port Harcourt?
2. What are the negative impacts of smartphones usage on undergraduate students in the Faculty of education, university of Port Harcourt?
3. What are attitude of undergraduate students usage of smartphones in the Faculty of Education, University of Port Harcourt?

Hypotheses

H₀₁: There is no significant difference between male and female students' positive impact of smart phone usage by undergraduate students in the Faculty of Education,

University of Port Harcourt.

H₀₂: There is no significant difference between male and female students' negative impact of smart phone usage by undergraduate students in the Faculty of Education, University of Port Harcourt.

H₀₃: There is no significant difference between male and female students' attitude towards the use of smart phone by undergraduate students in the Faculty of Education, University of Port Harcourt.

Method and Materials

Research Design: This study adopted a descriptive survey research designed to investigate the impact of smartphones on undergraduate students in the faculty of education, University of Port Harcourt.

Area of the Study: The area of the study was the University of Port Harcourt, Faculty of Education.

Population of the Study: The population of the study was 188 year one students in the department of human kinetics and health education, Faculty of Education, University of Port Harcourt.

Sample and Sampling Techniques: A sample of 120 students was used for the study. A simple random sampling technique was used for the study.

Instrumentation for Data Collection: The instrument used in this study to collect data from respondents was a structured questionnaire constructed by the researcher based on the four-point Likert scale of SA, A, D, SD. The questionnaire was designed to elicit responses from students on impact of smartphones on undergraduate students in the faculty of education, University of Port Harcourt.

Validity of the Instrument: Face and content validity was used for the study.

Reliability of the Instrument: Reliability coefficient of 0.72 was estimated using Pearson Product Moment Correlation.

Method of Data Analysis: Mean and Standard Deviation were used to answer the Research questions, while Z test was used to test the hypotheses.

Data Analysis

Research Question 1: What is the positive impact of smartphone usage on undergraduate students in the faculty of education, university of Port Harcourt?

Table 1: Positive impact of smart phones usage on undergraduate students in the faculty of education, university of Port Harcourt?

S/N	Items Positive impact of smartphones	SA	A	D	SD	Mean	SD	Total
1.	Students can use websites to obtain resources for their studies in addition to the apps that assist them with their homework or assignments.	112	6	2	-	3.91	0.33	120
2.	Smartphones can be used by students to access libraries.	90	20	10	-	3.66	0.41	120
3.	Students who use their smartphones properly can manage their time, set deadlines, and complete their assignments on time.	80	40	-	-	3.67	0.47	120
4.	Students can utilize a particular application to request help in a subject they are struggling with.	79	41	-	-	3.65	0.47	120
5.	Smartphones can be used for information gathering, news sharing with loved ones, and teacher-student communication.	10	10	-	-	3.66	0.37	120
6.	No matter where you are or what time of day it is, accessing instructional information is made simple by smartphones.	89	31	-	-	3.74	0.43	120
7.	Smartphones enhance social interaction and keep the school community in constant contact.	92	20	8	-	3.70	0.58	120
8.	Smartphones provide a range of interaction choices that can be tailored to the preferences of each user.	99	12	9	-	3.75	0.58	120
9.	Smartphones can quickly calculate and display content that is tailored to the user's needs.	94	16	10	-	3.70	0.61	120
10.	In many different ways, smartphones have the potential to enhance learning.	97	15	8	-	3.74	0.51	120
	Average Mean					3.71	0.41	

The item mean is greater than the criteria mean, which is 2.50. Table No. 1 demonstrated that students can utilize websites

to access materials for their studies in addition to the applications that assist them with their projects or

assignments because smartphones offer a choice of individual tastes.
engagement mediums that can be adjusted to match

Research Question 2: What are the negative impacts of smartphones usage on undergraduate students in the faculty of education, university of Port Harcourt?

Table 2: Negative impact of smart phones usage on undergraduate students in the faculty of education, university of Port Harcourt?

S/N	Items Negative impact of smartphones	SA	A	SD	Mean	SD	Total	
1.	Our brains' ability to work can be impacted by excessive smartphone use.	78	42	-	-	3.65	0.47	120
2.	As more time is spent online, less time is spent engaging in person.	85	35	-	-	3.70	0.45	120
3.	Furthermore, using a smartphone might make pupils lose interest in their studies and make exam fraud easier.	117	3	-	-	3.98	0.20	120
4.	Smartphones could serve as a platform for bullying.	80	33	7	-	3.60	0.59	120
5.	Smartphones can cause isolation	73	47	-	-	3.61	0.48	120
6.	Smartphone use might disrupt sleep and result in neck troubles.	93	26	1	-	3.77	0.44	120
7.	Smartphone use might disrupt sleep and result in neck troubles.	81	21	18	-	3.52	0.74	120
8.	Students who check their online security frequently may start to lose faith in those around them.	88	29	3	-	3.71	0.50	120
9.	likelihood of falling victim to an internet hoax and losing money	66	48	6	-	3.50	0.59	120
10.	Without complete awareness, the usage of applications may cause the leakage of personal information, which might be very dangerous.	114	6	-	-	3.95	0.22	120
	Average Mean					3.69	0.46	

The item mean is higher than the criteria mean, which is 2.50. Thus, Table No. 2 demonstrated that using a smartphone might also keep students from studying and leave room for

exam cheating. Furthermore, using apps without complete awareness could lead to the leakage of personal data, which could be quite dangerous.

Research Question 3: What are attitude of undergraduate students usage of smartphones in the classroom?

Table 3: Attitude of undergraduate students' usage of smartphone in the classroom

S/N	Items Attitude of students' usage of smartphones	SA	A	SD	D	Mean	SD	Total
1.	Smartphones offer several opportunities to create, disseminate, and promote creative educational methods.	110	8	2	-	3.90	0.35	120
2.	Smartphones can facilitate teamwork and communication.	107	13	-	-	3.00	0.94	120
3.	A smartphone can aid in the creation of new tools and teaching techniques.	113	4	3	-	3.91	0.36	120
4.	With an internet connection, smartphones can be used by students as modern learning tools.	102	10	8	-	3.78	0.55	120
5.	On their cellphones, students can capture and save content for later use.	116	4	-	-	3.96	0.20	120
6.	One's higher-order cognitive and computational skills can be enhanced by using a smartphone.	69	50	1	-	3.55	0.49	120
7.	Using smartphone features can improve more conventional teaching techniques in higher education.	79	30	11	-	3.57	0.65	120
8.	Using smartphones, students may work in groups on projects while sharing knowledge and findings.	83	20	17	-	3.55	0.72	120
9.	Students can collaborate in ways that work best for them thanks to smartphones.	77	43	-	-	3.64	0.30	120
10.	Students can use smartphones to swiftly locate solutions.	81	33	6	-	3.62	0.47	120
	Average Mean					3.64	0.50	

The item mean is higher than the criteria mean, which is 2.50. As a result, table number three demonstrated how smartphones can help students record and save information for later use, as well as enhance interactive and creative learning styles and the development of tools.

Hypotheses

H₀₁: There is no significant difference between male and female students' positive impact of smart phone usage in the Faculty of Education, University of Port Harcourt.

Table 4: Table of analysis to determine the significant difference between male and female students positive impact of smart phone usage in the Faculty of Education, University of Port Harcourt

Group	Mean	SD	N	Df	Standard Error	Z - Cal	Z-Crit	Decision
Male	3.91	0.33	50	98	0.07	3.57	1.96	Rejected
Female	3.66	0.41	50					

The result of the table above shows that the calculated Z-score of 3.57 is greater than the critical Z- value of 1.96. As a rule, when the calculated value is greater than the critical value, the hypothesis is rejected. This implies therefore that there is a significant difference between male and female

students positive impact of smart phone usage in the Faculty of Education, University of Port Harcourt.

H₀₂: There is no significant difference between male and female students' negative impact of smart phone usage in the Faculty of education, University of Port Harcourt.

Table 5: Table of analysis to determine the significant difference between male and female students negative impact of smart phone usage in the Faculty of Education, University of Port Harcourt

Group	Mean	SD	N	Df	Standard Error	Z - Cal	Z-Crit	Decision
Male	3.77	0.44	60	98	0.13	1.92	1.96	Accepted
Female	3.52	0.74	40					

The result of the table above shows that the calculated Z-score of 1.92 is less than the critical Z- value of 1.96. As a rule, when the calculated value is less than the critical value, the hypothesis is accepted. This implies therefore that there is no significant difference between male and female students

negative impact of smart phone usage in the Faculty of Education, University of Port Harcourt.

H₀₃: There is no significant difference between male and female students' attitude towards the use of smart phone in the Faculty of Education, University of Port Harcourt.

Table 6: Table of analysis to determine the significant difference between male and female students attitude towards the use of smart phone usage in the Faculty of Education, University of Port Harcourt

Group	Mean	SD	N	Df	Standard Error	Z - Cal	Z-Crit	Decision
Male	3.91	0.36	50	98	0.14	6.50	1.96	Rejected
Female	3.00	0.94	50					

The result of the table above shows that the calculated Z-score of 6.50 is greater than the critical Z- value of 1.96. As a rule, when the calculated value is greater than the critical value, the hypothesis is rejected. This implies therefore that there is a significant difference between male and female students attitude towards the use of smart phone usage in the Faculty of Education, University of Port Harcourt.

Discussing of Findings

Research Question 1: What is the positive impact of smartphone usage on undergraduate students in the faculty of education, university of Port Harcourt?

According to Table No. 1, students can use websites to find resources for their coursework in addition to using technologies to help them with assignments or homework. Smartphones also offer a variety of interaction choices that may be customized to each user's tastes.

The results of the current study corroborate those of Faheem, Fakhar, and Jawad (2021) ^[9], who found that all students regularly use cellphones to absorb academic material and attend lectures. The results show a strong correlation between smartphone use and academic achievement.

The study's findings are consistent with those of Aminu, Alhaji, Bappale, and Mohammed (2021) ^[3], who found that students have access to and are exposed to smartphones to a substantial extent, which has a positive effect on their academic performance.

The study's findings concur with those of Ifeanyi & Chukwuere (2018) ^[11], who found that most undergraduate students use smartphones to communicate with their professors and fellow students. It was found as a result that utilizing smartphones facilitates their completion of coursework and other responsibilities.

Research Question 2: What are the negative impacts of smartphones usage on undergraduate students in the faculty of education, university of Port Harcourt?

The finding in table No. 2 demonstrated how using a smartphone can also divert students from their studies and leave room for exam cheating. Furthermore, using apps without complete awareness could lead to the leakage of personal data, which could be quite dangerous.

The study's findings are consistent with those made by Manvin & Samah (2018) ^[15], who found that smartphones have a detrimental effect on students' academic performance,

psychological growth (anxiety, smartphone addiction), and social problems (lack of in-person social interaction, relationship issues).

The study's findings concur with those of Siew, Nor Syamimi Che, Nor Hairunnisa, and Nur Ain (2017) ^[24], who discovered that students' CGPAs decreased as they used their smartphones more frequently for academic purposes.

The study also supports the findings of Darko-Adjei (2019) ^[6], who discovered that students' use of smartphones has a negative impact on learning because of issues like key and screen sizes, unstable internet connectivity, and intrusive calls during class hours, and smartphone freezing during crucial learning moments.

Research Question 3: What are attitude of undergraduate students usage of smartphones in the classroom?

The use of a smartphone can facilitate the creation of tools, the recording and storing of information for later use, and the improvement of interactive, creative learning techniques, as shown in Table No. 3.

According to Lee (2021), students had a positive attitude toward their learning of writing, and the study corroborated his observations. Students have access to tools on their smartphones that are relatively similar to those from past research for enhancing the text's quality.

The findings of the study support those of Ignatius (2019) ^[11], who demonstrated that using smartphone mobile apps, students could learn English while engaging in a variety of online activities and improving their English proficiency.

The findings of the study are in line with those of Souad (2022) ^[25], who discovered that utilizing cellphones for learning gives students access to an interactive learning environment and improves their positive attitudes toward learning.

Conclusions

Smartphones give students access to whatever data or information they may need at any time or location, which makes studying more accessible and eliminates potential learning barriers. As a result, learning is more enjoyable. Students can enjoyably explore new things with cellphones rather than scrolling through entire books to find the necessary information. The study's findings so indicate that attitudes toward smartphone use among students range from favorable to unfavorable. The following issues were

discovered by the researchers as a result of deploying smart phones on undergraduate students at the University of Port Harcourt's Faculty of Education:

1. That in addition to using applications to assist them with their projects or homework, students can also use websites to obtain study materials.
2. Using a smartphone can also divert pupils from their study and leave them vulnerable to exam fraud. Furthermore, using apps without complete awareness could lead to the leakage of personal data, which could be quite dangerous.
3. Smartphones can help students create tools, enhance interactive and creative learning approaches, and save and record material for later use.

Recommendations

The following was suggested by the researchers

1. Students and parents feel more secure when they bring their phones to school and class.
2. During tests and exams, teachers should make sure that all students leave their smartphones in the school locker.
3. To promote paperless communication, school administrators should ensure that smartphones are used in the classroom.

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