



DIGITAL MOBILE DEVICES AND IMPLICATIONS ON ACADEMIC PERFORMANCES OF STUDENTS OF UNIVERSITY OF CROSS RIVER STATE.

Patrick Ukim Ineji¹ and Bibiana Uguoma Ineji²

Department of Journalism and Media Studies, University of Cross River State.

Abstract

This study investigated the use of digital mobile phones by students of the University of Cross River State and implications on their academic performance, particularly the ability to exert control on the extent of phone dependency. The Self Determination theory and the Social Cognitive theory were employed for the theoretical framework. SPSS version 25.0 and excel software were used for data analysis and summary. The questionnaire and the interview guide were utilized using a sample of 398 and 8(eight) respectively. The findings revealed that the extent of phone usage has significant influence on the rate of phone dependency among students of UNICROSS and, increased control of phone dependency has significant influence on the academic performance of students of UNICROSS. It was recommended that students should be guided to develop cognitive ability to make healthy use of smartphones for educational purposes such as e-learning, mobile learning, research, and other educational exercise.

Key words: Mobile devices, dependency, cognitive ability and academic performances.

1.0 Introduction

Mobile devices are handheld portable computers that enable users to execute tasks that can be done using a desktop or laptop computer. These mobile devices which include smartphones and tablets have software applications and operating systems that can connect to the internet through a cellular network or over wi-fi. The advent of these mobile devices brought about innovative changes to patterns of communications and interaction, access to information, sharing of information as well as learning processes of users which include e-learning and mobile-learning. The major users of digital devices are youths and its influence on them, both positive and negative is massive.

The United Nations Children Emergency Fund, UNICEF, reports that 71% of 15 – 24 years old are online, making them the most connected age-group worldwide. The

advantages and disadvantages of digital media on the youths has soared beyond the expectation of every concerned individual. The benefits of digital mobile devices usage are profound, so are the risks particularly, on the youths. Despite the impact of these devices on the learning process of the Nigerian youths and education in general, especially those in the tertiary institutions, the adverse impact on their academic performance cannot be overlooked. These have informed the need to understand the factors, causes and effect of unguarded influence of digital mobile devices on academic performances of students in tertiary institutions in Nigeria. The influence of habitual dependency and unguarded usage of cell phones by students is immense. This would require deliberate communication effort to successfully break the retrogressive behaviour and advocate more directional and healthy usage for effective academic

learning. Therefore, proper use of mobile phones, media literacy and self-assertion for efficiency in educational learning should be advanced.

The decline in the Nigerian educational sector as well as the academic performance of students have become issues of concern to stakeholders in the country. This regressive situation is attributed to several factors ranging from seemingly ineffective government policies, lack of political will to drive standard educational policies, poor funding, inadequate facilities, shortage of qualified teachers as well as poor devotion to studies by students. These problems are multifarious and cannot be attributed to external factors alone but also, the students' overly attachment to smartphones as well as the influence on their ability to assert discipline in the course of handling these devices.

Nigeria has witnessed a fast-growing young population as well as increase in smartphone usage. Smartphones are being used by the Nigerian youths, inclusive of students, not only for entertainment purposes, but also for creative activities on different online platforms such as Tiktok, YouTube, Instagram, Snapchat, Facebook, Twitter, Twitch, Reddit and Tumblr among others. The post-COVID era has also witnessed an increase in the number of youths using smart phones for employment opportunities and remote jobs to meet their economic needs. It cannot be denied that through the use of smartphones, youths, particularly students are open to many progressive opportunities offered on the internet, but the manner of usage that may be detrimental to their academic endeavor is a major concern to the academia and stakeholders in the educational sector.

In Nigerian institutions, students use the internet to gain and enhance knowledge, search for material needed for assignment, and for research. Anunobi, (2006). Other uses of the internet through their mobile devices include for entertainment, chatting, for accessing social media and e-mail, academic purposes, e-commerce,

employment/remote jobs, and other business opportunities. It cannot be ruled out that some of these students may also be involved in cybercrimes and other vices enabled by mobile devices and the internet which may take its toll on their academic performance as well. Therefore, the need to seek solutions that would encourage appropriate and healthy digital mobile device usage among students to curb the negative impact on their academic performances and invariably, further educational decline is imperative.

2.0 Statement of the Problem

The decline in the Nigerian educational system are usually attributed to poor funding, inadequate facilities, dearth of qualified teachers, uncultured students, poor parenting and guidance, indiscipline, examination malpractice, outdated syllabus, ineffective governmental policies among other factors, while minimal attention is given to students 'contribution to this menace. Educational decline from the angle of the youths can be measured in terms of poor academic performance which is exhibited in the following ways: Distractions, emotional disengagement from schoolwork, low enthusiasm for learning, lack of interest in learning, poor response to learning among others. Least mentioned are the cognitive capacity of the largest number of mobile device users to combat excessive use of digital mobile devices.

Without any doubt, digital mobile devices, particularly phone or smart phones have become an integral part of a student's life. It serves as a means to access the internet for educational and learning purposes, for information and social interaction, entertainment and for economic reasons. Also, it cannot be disputed that mobile devices, particularly smart phones have changed the way they learn, have made information more accessible and relationships more dynamic, but leaves much to be desired in their academic performance. Students have free access to phones, they are ICT savvy, versatile in the use of these mobile devices, and active on social media. It

is worrisome that these versatility with digital mobile devices with all the benefits they offer seem not to translate satisfactorily in their academic performance. The question then is, could it be the students do not have the cognitive capability to create a balance between excessive usage of mobile devices for purposes like entertainment, social interest, economic pursuit on one hand and academic endeavors on the other hand? Why does the usage of mobile phones seem to affect some students' academic performance positively and others negatively? How can the students of UNICROSS surmount the negative influence of mobile phones usage on their academic performance? What are the implications of digital mobile devices on the academic performance of the students of University of Cross River State? These and more will be the focus of this study.

3.0 Objectives of the study

The objectives of this study were to:

1. Ascertain the rate of influence of phone usage on students of University of Cross River State.
2. Find out the individual factors responsible for phone dependency and poor academic performance among students of University of Cross River State.
3. Find out individual coping mechanisms against the influence of phone dependency on academic performance among students of the University of Cross River State.
4. Determine ways to build capacity to regulate phone dependency and enhance academic performance among students of the University of Cross River.

4.0 Hypotheses

Ho: The extent of phone usage has no significant influence on the extent of phone dependency by the students of UNICROSS.

Ho: Increased control of phone dependency has no significant effect on the improved

academic performance among students of UNICROSS

5.0 Literature review

5.1 Mobile phones, the Digital mobile devices have contributed immensely to the evolution of communication. Mode of communication has been made easier, faster, and cheaper. The way people gain information, work, socialize and entertain themselves have been transformed and personalized. Digital mobile devices include tablets, e-readers, laptop computers, smart watches and hand-held gaming consoles and smart phones among others. The smartphone which is the focus of this study is accessible, and easy to use by people of all creeds, age, and status. It has its merits and demerits that are far reaching. The internet is described as the information superhighway. It is accessible to both young and old, gender friendly and useful to every career as well as people from all walks of life. The accessibility of the internet is enabled more by the proliferation of cell phones or smartphones among other digital mobile phones. Youths, particularly students have made the possession of smart phones or cell phones a key part of their life. Students in Nigerian Tertiary Institutions use mobile phones for a series of reasons which include accessing the internet for easy communications for academic purposes, entertainment, for pleasure, for social media information and for accessing economic opportunities.

Mobile phones have many features that help individuals to do so many things that are beneficial to their lives. Positive outcomes of mobile phones include reinforcement of social interactions and optimization of communication between individuals and systems. (Geser, 2004 in Sunday, Adesope, Maarhuis, 2021). When students spend very long hours on the phone without commensurate exhibition of positive results, then there is a problem. Notwithstanding the

benefits associated with the digital mobile phones, the demerits are also huge. These demerits could include phone addiction, distraction, wastage of time, sleep disorders, health problems as well as loss of study time particularly among students. Too much time spent using the mobile phone could also lead to cyberbullying, harassment, and molestation. Due to the excessive and diverse information at the tip of their fingers, students cannot but own a mobile phone. The social, economic, educational, cognitive as well as psychological effects of mobile phones cannot be underestimated. It is of concern that mobile phones can also hamper student's devotion to academic work, cause inattentiveness and distractions which can limit efficient learning. Wu and Xin (2019) identified lack of lofty ambitions and specific goals, the existence of cognitive misunderstanding and loose emotions, the distortion of life values, the defects of personality and ability as signs for poor academic performance. These can be triggered by excessive usage of mobile phones.

Mayen (2005) states that, students' attitude and behavior toward academic tasks are frequently influenced by their possession of a mobile phone which has social, economic, psychological, and educational effects. That those who are attached to their phones suffer inattentiveness, distractions and limited or non-participation in serious academic exercises. These and many other retrogressive attitudes developed through the use of mobile phones can hinder excellent academic performance. If appropriate solutions to these endemic situations can be advanced, students would be sensitized to employ mobile phone usage in more productive ways that would enhance their academic performances.

5.2 Quality education and implications of phone dependence on students cognitive ability.

Quality in education can either be termed as low or high and is measured by a certain

index which may include, the quality of infrastructural facilities in schools, access to comprehensive textbooks and teaching materials, conducive classrooms, and levels of students' achievement. These factors determine the standard of excellence or otherwise, but the most important is the level of students' academic achievement. Academic achievement of a student is expressed through strong cognitive expressions and achievement of educational set goals and not only in curricular areas or examinations. Olufemi, Adediran and Oyediran (2018) state that students' academic performance plays an important role in producing best quality graduates who will become great leaders and manpower for the country thus responsible for the country's economic and social development. Also, students are expected to strive to obtain good grades, prepare themselves for future opportunities in their chosen career as well as meet employer's demands in the same regard. Several factors can affect a student's academic performance and they include student's learning ability, peer influence, environmental influence, quality of learning infrastructure, teacher's quality, poor funding and currently, devotion to mobile devices and social media.

The effect of excessive phone usage or reliance has been noted to have adverse effects on academic performance as well as cognitive abilities of users, particularly students. Even though, several studies have been carried out on the effect of smartphones on learning and its outcome which have yielded different results on the effects on students' academic achievements and performance. It has also been observed generally by several researchers that addiction to phone use has the tendency to disrupt sleep, affect social lives, emotional stability, reduce social interactions and affect self-esteem. It is also reported to lead to solitude, depression, low productivity as well as low academic and cognitive performance. Achangwa, Ryu, Lee and Jang (2022) state that, Smartphone addiction was associated

with physical health leading to sleep disorders and musculoskeletal and neurological problems. That academic performance, procrastination, impulsivity, self-esteem, reduced social interaction, solitude, and suicide were also negatively associated with smartphone addiction. The root cause of phone addiction and over-dependency can be attributed to what they term "Fear of Missing Out (FoMO)" which implies a state in which an individual has the urge to continually be engaged online due to the fear of not catching up with the latest information on the internet. This situation is fueled by different social media platforms which are created to keep the users engaged, they include Facebook, YouTube, Instagram, X, Netflix, Linkden and many others. Despite the rate of phone usage among the people, there are those who exert control over the amount of time spent on these various apps.

Though controversy over the possibility of over-dependency of phone and its implications on the cognitive ability seems to be an issue of discourse as well as the ability to exercise self-control over the tendency. Attempts have been made to explain the several routes to smartphone addiction including the ability to regulate self-control and emotions, impulsivity, self-esteem, neuroticism, and distorted thinking. (Achangwa et al, 2022) They however claimed that certain factors may incline the tendency to negative usage of phones among students and they include, gender, age, socio-economic status, personality, and individual characteristics.

5.3 Theoretical framework

The Self Determination Theory, SDT and The Social Cognitive Theory, SCT were adopted to explain the intersection between phone addiction and academic performance among students at the University of Cross River State.

The self-determination theory of motivation developed by Richard Ryan and Edward Deci

is concerned with the psychological wellbeing of an individual, particularly the ability to exert control over decisions about one's life. The theory explains how an individual can guide his life more. It is based on three basic psychological needs which are the need for competence, autonomy, and relatedness according to Deci and Ryan (2015). They observed state that these basic psychological needs serve as essential nutrients to effective functioning and wellness which in turn promotes the necessary motivational traits and internal satisfaction which is a clear manifestation of a healthy psychological state in an individual. Based on the concept of this theory, students can be motivated by understanding that they have the requisite capability to take control of their decisions about phone usage in relation to its implications on their academic performance. This can help them to create a balance between concentration on non-academic and academic materials online either for their good or otherwise.

The Social Cognitive theory, SCT. showcases a process of inter relationship among personal factors, environmental factors, and human behavior. The likelihood that behavior change could occur in an individual is determined by three factors, namely, self-efficacy, goals, and outcome expectancy. The interplay among these factors is that it is believed that if an individual has the capacity to take personal decision to adopt a particular behavior, then there is the tendency for behavior change to occur. This implies that a student can decide to use the phone more for meaningful academic endeavors rather than a distractive instrument, particularly when he or she is aware that the change in behavior could lead to improved academic performances. The Self Determination Theory and The Social Cognitive Theory complement each other as they emphasize cognitive capability to take control over the decision to adopt the phone as a productive instrument rather than a

disruptive instrument to higher academic performance.

6.0 Methodology

This research adopts the survey research technique including in-depth interview for the purpose of gathering information, opinion views and knowledge on the implications of mobile phones addiction on the academic performance of students in the University of Cross River State, UNICROSS, in Cross River State. The focus was on the undergraduate students and staff who directly and indirectly affected students' poor academic performance. Cluster and random sampling techniques were employed to select the sample from the four campuses of the UNICROSS: Calabar, Obubra, Okuku, and Ogoja. Eight faculties were randomly selected from the four campuses in a bid to give equal representation to both students and teaching staff. The population of the study are the teaching staff and students of UNICROSS. As of 2023, the population figures for the teaching staff and students stand at 409 and 20,000 respectively. In-depth interview was adopted to gather information on the effect of mobile phones on the learning process and academic

performance of their students from two teaching staff from each campus, implying that the sample size for the in-depth interview is eight (8) lecturers. The Taro Yamane sampling technique was used to select a sample size of 398 from among the students. The data gathering instrument for the in-depth interview is the interview guide while due to the large number of students earmarked for the survey, the questionnaire was deemed the most appropriate for the survey respondents. Data gathered from the in-depth interview were analyzed using explanation building technique while Data from the questionnaire was analyzed using frequency distribution table to present data. SPSS version 25.0 and excel software were employed to test the hypotheses formulated for this study.

6.1 Analysis of questionnaire data

Ho: The frequency of phone usage has no significant influence on the rate of phone dependency among students of UNICROSS.
 Ho: Increased control of phone dependency has no significant effect on improved academic performance among students of UNICROSS.

TABLE 1: Responses on frequency of usage of mobile phone

Item	SA	A	D	SD	NR	Total
Q1	255 (64.0%)	120 (30.0%)	15 (4.0%)	0 (0.0%)	8 (2.0%)	398 (100.0%)
Q2	111 (28.0%)	183 (46.0%)	77 (20.0%)	19 (4.0%)	8 (2.0%)	398 (100.0%)
Q3	39 (10.0%)	88 (22.0%)	183 (46.0%)	72 (18.0%)	16 (4.0%)	398 (100.0%)
Q4	24	40	183	143	8	398

(6.0%)	(10.0%)	(46.0%)	(36.0%)	(2.0%)	(100.0%)
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TABLE 2: Responses on rate of dependency on mobile phone by students

Item	SA	A	D	SD	NR	Total
Q5	262	128	8	0	0	398
	(66.0%)	(32.0%)	(2.0%)	(0.0%)	(0.0%)	(100.0%)
Q6	96	191	48	63	0	398
	(24.0%)	(48.0%)	(12.0%)	(16.0%)	(0.0%)	(100.0%)
Q7	150	128	88	32	0	398
	(38.0%)	(32.0%)	(22.0%)	(8.0%)	(0.0%)	(100.0%)
Q8	48	159	103	88	0	398
	(12.0%)	(40.0%)	(26.0%)	(22.0%)	(0.0%)	(100.0%)

TABLE 3: Responses on increased control over the use of mobile phone

Item	SA	A	D	SD	NR	Total
Q9	183	159	48	8	0	398
	(46.0%)	(40.0%)	(12.0%)	(2.0%)	(0.0%)	(100.0%)
Q10	80	111	167	24	16	398
	(20.0%)	(28.0%)	(42.0%)	(6.0%)	(4.0%)	(100.0%)
Q11	143	191	16	40	8	398
	(36.0%)	(48.0%)	(4.0%)	(10.0%)	(2.0%)	(100.0%)

Q12	255	96	8	31	8	398
	(64.0%)	(24.0%)	(2.0%)	(8.0%)	(2.0%)	(100.0%)

TABLE 4: Responses on Increased control phone usage on academic performance

Item	SA	A	D	SD	NR	Total
Q13	255	135	8	0	0	398
	(64.0%)	(34.0%)	(2.0%)	(0.0%)	(0.0%)	(100.0%)
Q14	167	199	16	16	0	398
	(42.0%)	(50.0%)	(4.0%)	(4.0%)	(0.0%)	(100.0%)
Q15	248	128	18	4	0	398
	(62.0%)	(32.0%)	(4.0%)	(2.0%)	(0.0%)	(100.0%)
Q16	223	151	24	0	0	50
	(56.0%)	(38.0%)	(6.0%)	(0.0%)	(0.0%)	(100.0%)

7.0 Discussion of findings

Hypothesis one reveals that the extent of phone usage has significant influence on the rate of phone dependency among students of UNICROSS. This result as revealed in table 1 and 2 implies that, the rate and duration of engagement with other things aside academic exercises using internet accessible phones can lead to excessive dependence or addiction to phones. This finding corroborates Achanga et al (2023) observation that university students have strong desire to use their smart phones while interacting with friends and family leading to distractions that adversely affect social interactions and obligations. Hypothesis two represented in Table 2 and 3 shows that

increased control of phone dependency has significant influence on the academic performance of students of UNICROSS. This result reveals that ability to reduce rate of engagements, cultivating time management, suppressing the urge to use the phone beyond a set time and intentional setting academic goals as well as sourcing or utilization of academic related materials can reduce detrimental phone usage and increase academic performances among UNICROSS students. The interview guide consisted of eight (8) questions that encompassed the following variables/themes: phone dependency, attitude, academic performance, and cognitive ability. In response to the question about phone dependency among students, it was revealed that the extent of phone

usage among the students of UNICROSS has influenced the rate of dependency on phones. They state that based on observation, many students are excessively addicted to their phones, and this is reflected in their manner of handling the digital mobile devices. Some use it while lectures are ongoing, while walking on the road as well using them to aid examination malpractices instead of reading to pass. It was unanimously observed that the rate of excessive phone dependence is also obvious in their writing, particularly the use of social media abbreviations for formal or academic writing. This corroborates the findings from the questionnaire that the extent of phone usage has adverse effect on students' extent of dependency on their phones. These adverse effects as listed by Achangwa *et al.* (2023) are, poor physical health, psychological and mental health, poor academic performance, procrastination, and impulsivity, reduced social interaction, solitude, and suicide which are the most observed adverse effects of smart phone addiction. Rodriguez, Lozano, Mingorance, and Perez-Marmol (2020) revealed that, addiction symptoms caused by smart phone use (withdrawal, tolerance, excessive use, and problems caused by the same) and the variables of extrinsic motivations (fear and avoidance of the task) and intrinsic motivation (motivation towards the task). They also stated that excessive use of phones can result in anxiety and lack of desire to learn. Student may even be using smart phones for every other thing aside from academic purposes such as for social interactions, watching pornographic contents, forex, and crypto trading which may further affect their academic goals and expected performances. In response to the extent to which phone usage has affected their academic performance, the interviewee's assessment showed that after each semester's examination, some of the student's performances are not as good as expected especially in an era of limitless access to technology and internet which brings information easily to their doorsteps. This is in contrast with the expectations that access to

information on various subjects on the internet should constitute an advantage to the students' academic performances. This implies that excessive phone usage may lead to phone addiction or dependency which invariably may affect the academic performances of the students negatively. This can be remedied if the students can exercise control over the rate and utilization of phones to the disadvantage of their academic performances. The Self Determination Theory emphasizes the ability to exert control over decisions about one's life through competence, autonomy and relatedness leading to the psychological wellbeing of an individual which may also be utilized in the case of phone usage and control over addiction to it by students. Rodriguez *et al.* (2020) observed the relationship between control over addiction to smart phones, cognitive, emotional, and educational variables such as emotional intelligence, general intelligence, creativity, motivation, and self-perceived competences which are protective factors against phone addiction. Those who can overcome this phone dependency by becoming self-confident, assertive, able to set goals towards achieving improved academic results can become role models and are able to influence other students in the same environment according to the Social Cognitive Theory. If mobile smart phones are used responsibly, it can help to improve students' academic performances, enhance creativity in academic exercise, become an instrument of exploration for further studies. Smartphone use as an education tool could enhance learning. (Tessier, 2013).

8.0 Recommendations and conclusion

The implication of mobile phone dependency on the academic performance of students in the University of Cross River State as well as nationwide is worrisome, therefore the following recommendations based on the findings of the study are:

1. In this digital age, students cannot be denied the possession of a smart phone, in the light of this, they should be made

to use smart phones as complementary and support tools to their academics.

2. Teachers and guidance should impress it upon students that healthy use of smart phones is highly efficient in conducting research, discover new activities and projects that are related to their studies.
3. The institution should also adopt e-learning process that may also lead to mobile learning among students. This would encourage more use of smartphones for educational purposes among students even while on the go.
4. Students should be taught how to regulate screen time by lecturers, parents as well as guardians and be disciplined enough to abide by it

It was established that individual factors influence students' behaviors, particularly their attitudes to their mobile devices and eventual impact on their academic performance. The study brought to the fore, the various factors such as self-determination as well as cognitive efficacy that will help the students to overcome the struggles between devotion to their mobile phones and their academic endeavor. Cognitive ability and resiliency will help students to have control over the impulsive action to always engage on social media contents not relevant to their studies. The sensitization of students, lecturers, and other educational stakeholders on how to improve academic excellence among students in tertiary using smartphones has become necessary.

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