



Cyber Crime among Mathematical Science Students: Implications on their Academic Performance

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Abstract

It is a very rampant crime among students of both secondary and tertiary institutions in Nigeria. This research intends to evaluate the effect cybercrime has on the academic performance of mathematical science students of Oyo State College of Education Lanlate, Oyo State Nigeria. This research uses a case study design method through a questionnaire. Random sampling with replacement was used to select 150 respondents from NCE I-III. The data collected were analyzed using a mean score rating. The study reveals that the majority of respondents have in-depth knowledge of what cybercrime is and how it is been perpetrated. The respondent claimed to know through friends and the Internet. Also, respondents attributed the course to poverty, peer influence, and non-prosecution of the offender by the security agency. The study revealed that student who indulges in cybercrime have difficulty concentrating in class, have poor study habits and eventually drop out of school due to poor performance students who get addicted to cybercrime often get convicted; go to prison, and eventually lose their lives. The study recommends that the government should include courses to treat cybercrime in the secondary and university curriculum. Also, an aggressive orientation from government mass media and religious bodies should be done to expose innocent youth to the menace of cybercrime. Also, the government should improve the economic situation of the country by providing job opportunities, empowerment, and relief funds for youth to have a better life.

Keywords: cybercrime, students, academic performance

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Introduction

The internet revolution in Nigeria has brought enormous changes to social and academic ways of life (Popoola, 2020); (Dwivedi et al., 2023). The Internet brought numerous changes to the educational system in Nigeria (Udoudo & Ojo, 2016); (Olanrewaju et al., 2021); (Adeoye et al., 2023). It changes the way instruction is being delivered from traditional teacher-directed classroom instruction to the use of computer-aided instruction and the use of search engine tools (Alam & Mohanty, 2023). The internet allows students to access huge data stored on computers around the world as opposed to going through fat reference material in the library. Also, it changes the way records are being managed from a manual system to the use of information and communication technology. It has also changed the payment system from a bank teller system to pay via online payment. Many changeovers happened from manual systems to computerized systems through the use of ICT. The Internet offers speedy processing and dissemination of data and information (Allioui & Mourdi, 2023). With the introduction of high-speed internet bandwidth in a college of education (NCE), students could access online resources for improved assimilation and could also make research easy for lecturers.

The development has increased the form and nature of crimes that are committed against electronic equipment known as cybercrime. Students accessing the internet without restriction code led to misuse and abuse in the form of cybercrime. Access to the internet for other things aside from academics has the potential to lead students to cybercrime. Indiscriminate manners of browsing could lead students to become victims of cybercrime. (Limniou, 2021), reported that improper use of the internet could degrade students' academic performances. He further revealed that it could expose them to becoming the victim of cybercriminals because undesirable browsing could lead students to a malware site that could make them become compromised through hacking or identity theft. (Alkhalil et al., 2021), in their study discovered that students from secondary school are capable of using computer and internet facilities for different kinds of cybercrime ranging from credit card fraud to pornography at the expense of their studies. Therefore, cybercrime covers every crime committed in cyberspace with the use of electronic equipment.

Cybercrime is very rampant among the students of both secondary schools and universities in Nigeria. It is popularly referred to as Yahoo Yahoo+ in Nigeria. Its prevalence is triggered by the affordability of smartphones by average school-going Nigerian youth. Most parents purchase smartphones for their students to help them communicate and do assignments in school (Wang et al., 2023). The Preparation for university education which includes enrolment for admission has also created an avenue to purchase smartphones or computers for students. Students need computers to prepare to take both the Unified Tertiary Matriculation Examination and post UTME. Easy access to the internet with a smartphone is another factor that has contributed significantly to the use of cyberspace by school-going students. Access is based on the purchase of data from different mobile phone subscribers. This has both positive and negative on the academic performance of students (Ahmed et al., 2020); (Zogheib & Daniela, 2022); (Jo & Baek, 2023); (Chen et al., 2022).

Cybercrime is on the increase among Nigerian secondary, school leaver, and tertiary institution students. This increase has been largely attributed to the Internet revolution. This crime has made people doubt the need for the internet. Cybercriminals continue to use the internet through virtual private network (VPN) applications to change their location to commit cybercrime,

create proxy websites to redirect the user to a malware site, and many more. Academic performance has since dropped drastically as the student does not consider education as a means to posterity. With this, it is highly important to research the implications of cybercrime as it affects student academic performance in schools (Althibyani & Al-Zahrani, 2023).

Methodology

The research design that was used to carry out this research work is a case study design. Nigeria Certificate in Education I, II, and III students of Oyo State College of Education, Lanlate (Oyscoel) were used as the population for the study. A hundred fifty sample students fifty each from NCE I, II, and III were randomly selected. This was due to speculation that Oyscoed students have also been into cybercrime recently. This research observed the behavior of NCE students and recorded it in a way that is flexible enough that students hardly know they are being observed. Oyscoel School of Secondary Education (Science Programmes) has a total of 600 students that are spread among five departments. A questionnaire and interview were used as a medium of data collection. The data collected were analyzed using a mean score rating. The four-point rating scale was given values as follows: SA Strongly agreed 4, A Agreed 3, SD strongly Disagree 2, D Disagree 1. The study accepts a mean score of 2.5 and above and rejects a mean score lesser than 2.5.

Through the conduct of this study, the researcher aimed to provide answers to the following questions; what are the student perceptions of how cybercrime is perpetrated? What are the student perceptions of the reasons why people engage in cybercrime? What are the implications of cybercrime on the academic performance of students in Oyo State College of Education, Lanlate? What are the trends of cybercrime in Nigeria? Discovering the answers to the questions above will enable the government and all stakeholders in education to as a matter of urgency implement measures to improve academic excellence among Nigerian youth.

Result

This section presents the analysis of the result based on the research questions. The respondents comprised males and 80 females from Part I to Part III. Below are the findings in Tables.

Research Question I: What are the student perceptions of how cybercrime is perpetrated?

Table 1 below shows the responses of the respondents regarding the perception of students on how cybercrime is being perpetrated.

Based on Table 1, Items 1, 2, 3, 4, and 5 have a mean score of 3.0, 3.2, 3.1, 3.1, and 3.4 which are all more than the yardstick means a score of 2.5 and were, therefore, all accepted. This shows that respondents strongly agreed that students perpetrate cybercrime in the following ways; Students gain access to individual or organizations' financial information through impersonation, Students use international money transfer agencies to perpetrate fraud using Virtual Private networks, Students use special hacking software to infiltrate financial institution's records on the internet, students steal trade secret suppliers' agreement, personal records, and research documents, to purchase online, Students use dating sites to deceive and manipulate females students resulting in stealing or murder.

Table 1. The perception of students on how cybercrime is being perpetrated

S/N	Item	SA 4	A 3	D 2	SD 1	N Σfx	$\frac{\Sigma fx}{N}$	Decision
1.	Students gain access to individual or organizations' financial information through impersonation	22 88	14 42	8 16	6 6	50 152	3.0	Accepted
2.	Students use international money transfer agencies to perpetrate fraud using Virtual Private Network	24 96	16 48	6 12	4 4	50 160	3.2	Accepted
3.	Students use special hacking software to infiltrate financial institutions' records on the internet.	18 72	14 42	16 32	2 2	50 154	3.1	Accepted
4.	Students steal trade secret suppliers' agreements, personal records, and research documents, to purchase online.	22 88	16 48	8 16	4 4	50 156	3.1	Accepted
5.	Students use dating sites to deceive and manipulate females students resulting in stealing or murder	26 104	18 54	4 8	2 2	50 168	3.4	Accepted

Research Question II: What are the student perceptions of the reasons why people engage in cybercrime?

Table 2 below shows the responses of respondents on the student perceptions of reasons why people engaged in cybercrime.?

Table 2. The student's perceptions of reasons why people engaged in cybercrime

S/N	Item	SA 4	A 3	D 2	SD 1	N Σfx	Mean $\frac{\Sigma fx}{N}$	Decis
1.	Undue imitation of friends and neighbours	14 56	24 72	10 20	2 2	50 150	3.0	Accepted
2	Get rich quick syndrome	20 80	20 60	4 8	6 6	50 154	3.1	Accepted
3	Poor parenting style	26 104	18 54	4 8	2 2	50 168	3.4	Accepted
4	The greed to get rich quickly	28 112	16 48	4 8	2 2	50 170	3.4	Accepted
5	Security agency compromise their duties which make	20 80	18 54	10 20	2 2	50 156	3.1	Accepted

From Table 2 Items 1, 2, 3, 4, and 5 have a mean score of 3.0, 3.1, 3.4, 3.4, and 3.1 which are all more than the yardstick means a score of 2.5 and were, therefore, all accepted. This shows that respondents strongly agreed that cybercrime among students is caused by the following; Undue imitation of friends and neighbors, get-rich-quick syndrome, poor parenting style, The greed to get rich quick Security agency compromising their duties which make cybercriminals go unpunished.

Research Question III: What are the implications of cybercrime on the academic performance of students in Oyo State College of Education, Lanlate?

Table 3 below shows the responses of the respondents on the implications of cybercrime on the academic performance of a student.

Table 3. The implication of cybercrime on the academic performance of a student

S/N	Item	SA 4	A 3	D 2	SD 1	N Σfx	Mean $\frac{\Sigma fx}{N}$	Decision
1.	Missing continuous assessment due to Poor class attendance	22 88	18 54	4 8	6 6	50 156	3.1	Accepted
2.	Poor concentration due to engaging in internet communication during lectures	16 64	16 48	10 20	8 8	50 140	2.8	Accepted
3.	Staying more with security agencies to resolve crime issues makes students miss classes	22 88	18 54	6 12	4 4	50 158	3.2	Accepted
4.	Students who perpetrate cybercrime stay late at night surfing the internet as opposed to reading	18 72	18 54	6 12	8 8	50 146	2.9	Accepted
5	Students spend lavishly mostly on female students and irrelevant	18 72	14 42	8 16	10 10	50 140	2.8	Accepted

From Table 3, Items 1, 2, 3, 4, and 5 have a mean score of 3.0, 3.2, 3.1, 3.1, and 3.4 which are all more than the yardstick means a score of 2.5 and were, therefore, all accepted. This shows that respondents strongly agreed that cybercrime affects students' academic performance in the following ways; Missing continuous assessments due to Poor class attendance, Poor concentration due to engaging in internet communication during lectures, and staying more with security agencies to resolve crime issues which make the student miss classes, Students who perpetrate in cybercrime stay late at night surfing the internet as opposed to reading, Student spend lavishly mostly on female students and irrelevant.

Research Question IV: What are the trends of cybercrime in Nigeria?

Table 4. The trend of cybercrime

S/N	ITEM	SA	A	D	SD	N	Mean	Decision
		4	3	2	1	$\sum fx$	$\frac{\sum fx}{N}$	
1.	Cybercrime is gradually becoming a cyber ritual	22	18	4	6	50	3.1	Accepted
		88	54	8	6	156		
	Students are moving toward robbery	16	16	10	8	50	2.8	Accepted
		64	48	20	8	140		
2.	Online betting and gambling	22	18	6	4	50	3.2	Accepted
		88	54	12	4	158		
3.	Online bullying	18	18	6	8	50	2.9	Accepted
		72	54	12	8	146		
4.	Kidnapping	18	14	8	10	50	2.8	Accepted
		72	42	16	10	140		

From Table 4, Items 1, 2, 3, 4, and 5 have mean scores of 3.1, 2.8, 3.2, 2.9, and 2.8 which are all more than the yardstick means scores of 2.5 and were, therefore, all accepted. This shows that respondents strongly agreed that following the upgrade of security by a financial institution and the orientation of masses on the way by which people engaged in cybercrime, the perpetrators have to find another way of getting rich quickly, including the following; cyber ritual, robbery, online betting and gambling, online bullying and kidnapping.

Discussion

The studies found that the majority of students have an understanding of how cybercrime is being perpetrated, it is very common among students and every student has the potential to engage in it with any available opportunity (Althibyani & Al-Zahrani, 2023). Respondents refused to see cybercrime as a crime and saw it as a means to an end. The study revealed that NCE III students formed the bulk of the perpetrators of cybercrime. NCE I and II represent very few of the perpetrators. This further revealed that students were influenced by cybercrime during their second year in college (Alharbi & Tassaddiq, 2021); (Cheng et al., 2020); (Rahman et al., 2023). The study also revealed that respondents identified undue imitation of friends and neighbors, poor parenting style, greed for quick riches, and Security agencies compromising their duties which make cybercriminals go unpunished as major things that entice students into cybercrime. Student results from the academic affairs unit also revealed that those involved with cybercrime perform poorly as opposed to their counterpart who abstained from cybercrime. Therefore, the study concludes that involvement in cybercrime has a significant relationship with students' academic achievement. Cybercriminals' activities like heavy drinking, smoking Indian hemp, buying flashy cars, and indiscriminate sex cause students to perform below standard to maintain their studentship and therefore drop out of school. This greatly threatens the future of the Nigerian educational system.

From the findings of this study, it could be asserted that cybercrime has become a cankerworm in Nigeria's education system. It presents itself in various ways ranging from identity theft to betting. The presence of technology in our school in the form of smart devices did not have a positive impact on the academic achievement of students. By using smart devices, the teaching-learning process should become more comprehensible to the learner. Smart devices appeal to learners' senses, ability to attract and hold attention and focus on the essential classroom learning

process. The reverse is the case in the selected case study. It is rather a tool that causes distractions in the learning process activities. This research is in line with (Javaid et al., 2023); (Amankwa, 2021), who revealed that students now use Information and communication technology gadgets to perpetrate cybercrime as opposed to using them to access e-library for online resources about their studies.

The outcome of this research shows that cybercrime is increasing at an alarming rate and students are not seeing it as a sin any longer. The study, therefore, recommends the following to address the menace and reduce its negative impact on the academic performance of the students.

- i. As a matter of urgency government should endeavor to include in the curriculum of instructions cybercrime courses to be taught at both secondary school and tertiary institutions
- ii. Parents and religious bodies should aggressively orientate youth on the menace of cybercrime. Youth should be made to know hard-working brings prosperity.
- iii. Governments should orient the populace through various media on the danger of cybercrime.
- iv. Governments should provide employment opportunities, empowerment, and relief funds for youth to have a better life.
- v. Stringent measures such as suspension and expulsion should be put in place for a student caught engaging in cybercrime of any kind.
- vi. Creation of a cyber security court that will see to the adjudication and conviction of cyber criminals. This will facilitate easy prosecution and fast judgment.
- vii. Police and other security agencies should be made to undertake courses on cybercrime detection using technology as opposed to the current stop and search which is intruding into personal privacy and embarrassing the innocent citizen.

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