Modern Technological Gadgets and Academic Performance of Students in Selected Universities in Edo State, Nigeria

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Abstract

Nigerian students in recent times easily access materials (academic and non-academic) which do not only pertain to their institution or society but the world in general. There is no disputing the fact that globalization, modernization and socialization play a major role in the student learning experience. This study examines the role of modern technological gadget on students' academic performance in selected universities in Edo state. The modernization and functionalism theories was adopted for the study, for method and materials, 450 students (respondents) were systematically selected from 3 universities (1 federal, 1 state, 1 private) with the use of a semi-structured questionnaire and 6 in-depth interviews conducted on representative of the student union government of the universities (where available). From the findings, it was discovered that; the invention of modern technologies has made academic discoveries easier, there is a nexus between modern technological gadgets and students' excellence in academic achievement and performance, the impact of modern technological gadgets on students' academic performance has a dialectical dimension. Based on the findings, the study recommends that there should be proper monitoring of student's activities on technological apparatuses so as to checkmate the improper activities that will hinder their technological and educational advancement.

Keyword: Academic performance, Gadgets, Modernization, Students and Technology.

Introduction

There has been a global advancement in the area of technologies driven by modernization, globalization, westernization and socialization. One of the areas of benefit in this global advancement of technologies is in the educational sector where the quest for new knowledge is fundamental. Technology has been and will remain a prime stimulus for change in our society as social change is a pervasive phenomenon that is inevitable in human society and as affirmed that among the catalysts of social change, technological innovation ranks extremely high (Alenkhe & Obarisiagbon, 2018; William & Whiting, 2016). Raman (2011) as cited in Alenkhe and Obarisiagbon (2018) agreed that in the 21st century, technology plays a great role in the actualization of most activities like learning. Learning in the educational sector requires a critical thinking/assimilation process with the availability of the required tools for learning as Raja and Nagasubramani (2018) insinuated that students now prefer the use of modern technologies in getting the best impact of learning. This they affirmed is made necessary due to the interactivity between students not only within their territorial boundaries but beyond their physical environment. It was also deduced that modern technological gadgets have made knowledge transfer much easier, convenient and very effective.

Sociologically, Hogan (2006) defined technology as that segment of culture, including knowledge and tools that man uses to manipulate his physical environment in order to achieve desired practical

ends. In another dimension Microsoft Encarta Dictionary (2009) defined it as the application of tools and methods: the study, development, and application of devices, machines, and techniques for manufacturing and productive processes. While the concept of gadget signifies ingenious device- a small device that performs or aids a simple task or a trivial device- a small device that appears useful but is often unnecessary or superfluous. Ritzer (2008) added by giving an overview on the concept of modern technology, when he said the implosive, flattening technologies of post-modern era gave birth to very different cultural products than the explosive, expanding technologies of the modern era.

Westera (2005) explained that from the 20th century, technology was no longer considered a mere instrument of industrial innovation. It is interpreted from the idea that technology makes up an integral part of life and fundamentally alters the way we experience reality. Globally, statistics has revealed that higher institutions have advanced in the use of various technological gadgets in the transfer of knowledge to respective students, studies have shown that the gadgets mainly used include, projectors, electronic marker board, mobile phones, tablets, iPads computers, television, etc. It was also revealed that social networks have made the students very active by increasing their interaction and knowledge distribution (Onat & Alikılıç, 2008: Kurt & Devecioglu, 2015).

However, there is another dimension to the use of technological gadgets as an addiction often has a psychological effect on their way of life as it also derails them from the initial aim for which it was created. Ibiezugbe and Alenkhe (2016) observed that breakage from family hostage, taste of social freedom and more especially exposure to some illicit videos, films and pictures from the internet often expose youth to sexuality among their peers. This becomes more pertinent in the face of the Information Communication Technology (ICT) and the International Network (Internet). For the educational benefit of the international network, items as sourced materials, online textbooks, journals etc. are utilized by students on a daily basis so as to be updated with current realities, innovative ideals and leading information around their environment. With the invention of western education, the Nigeria society has been trying to adopt the curriculum of western countries especially that of the Great Britain who was her colonial master as globalization and modernization is uniting the world to becoming a small village.

Schaefer (2007) stressed that the impact of modern technological gadgets in the world can never be overemphasized, as the advancement in technology has affected all aspects of life in relationship to man and his physical environment. Poushter (2016) as cited in Schindler, Burkholder, Morad, and Marsh (2017) also affirmed that the use of computer, mobile devices and the internet is on the rise globally as technology becomes accessible and developing countries like Nigeria is not excluded from this scheme. Despite the huge amount of technological gadgets being acquired on daily basis by youth in Nigeria, not much success has been revealed concerning the educational achievement by her youth who are supposed to be students with great interest for advanced knowledge. Flanagan (2008), explained that technology is a great tool to enhance students' achievement. However, its utilization in the classroom is sometimes deemed questionable. The outcome of these questionable usage of technological gadgets is often seen in their academic success and achievement as this study seeks to examine the nexus between modern technological gadgets in the face of the internet and students' academic performance in selected tertiary institutions in Edo State.

Theoretical orientation

Modernization theory and functionalism was used in elucidating the impacts and roles of modern gadgets on students' academic performance in Edo State. According to Onwuka (2000), modernization theory has its root in the ideas of Emile Durkheim and Max Weber. To him, Durkheim's theory of development of complex modern society from simple "primitive" must be understood from his theory of social order and stability. Durkheim proposed that there are two types of society; the traditional and the modern, each society with its unique lifestyle. The traditional performed a simple agrarian community based task, with the use of simple tools, partly crude material and this influences the way the traditional society thinks, acts and believes. This, Durkheim called mechanical solidarity.

Durkheim's idea of modern society is in contrast with the traditional society. According to Onwuka (2000), in trying to reduce the stress of the complex and ever increasing population, coupled with demand, Durkheim brought about the division of labour. However, this became more complex and created an increasing "interdependency" among people and he classified this as organic. The modern society created a new pattern of morality and a system of norm, with less rigid system (machine inclusive) to solve man's desire for development. Weber's contribution was more of the emergence of industrialization, though he focused more in answering why capitalist manufacturing became dominant only to the economies of Western Europe (Onwuka, 2000). The emphasis here was on the manufacturing of machines (gadgets), which is a slight shift/deviation from the traditional society's ways of thinking, acting and believing in getting things done.

Functionalism also has its own tenets, it is worthy of note that the theory of functionalism was derived from the biological explanation (Schaefer, 2008). It explains a society as a living organism in which each part contributes to its survival. It is viewed from the way society is structured and functioned for social stability. One of the proponents of this theory (functionalism) is Talcott Parsons (1902-1979), who was influenced by the work of Emile Durkheim and Max Weber. Parsons, an American Sociologist see society as a vast network of connected parts, each of which help to maintain the system as a whole. His approach holds that an aspect of social life which does not contribute to a society's stability or survival- if it does not serve some identifiable useful function or promote value consensus among members of a society- it will not be passed from one generation to the next (Schaefer, 2008).

In analyzing the usefulness and the role of modern technological gadgets, it is pertinent to note that there are many benefit of using this materials (gadgets) especially to students seeking to advance their knowledge and whose impacts is being felt in the society as a result of knowledge acquisition. Therefore, according to Parson (1951) in comparative perspective, ideas, values and other aspects of social life (machine inclusive) can be passed from one generation to the next because it is useful and carries' out certain roles or functions with impact to the human capital development and other unintended functions in the society

Objective of the study

The general objective of the study is to examine the nexus between modern technological gadgets and student academic performance in selected universities in Edo state. Other specific objectives include;

1. To ascertain the various technological gadgets available and utilized by university students in Edo state.

2. To examine the prevalence of the utilization of the technological gadgets and for what purpose by the university students
3. To examine the impact of modern technological gadgets on university students academic performance in Edo state

Methodology

The study adopted an exploratory study design and triangulated both the qualitative and quantitative method and instruments for data collection and analysis, as it made us of semi-structured questionnaire in eliciting the desired response from the respondents. While an in-depth interview guide was conducted to buttressing key respondent's opinion on the subject matter. 450 respondents were selected from 3 universities in Edo state namely; the University of Benin (Federal), Ambrose Alli University, Ekpoma (state) and Benson Idahosa University Benin city (Private). A multi-stage sampling technique was adopted for the study, as 150 respondents comprising of undergraduate students were selected from each of the various universities. 2 key respondents from the student union government representatives (where available, and 2 class representatives selected at random where there is no student union government) were selected for interview from each of the universities. Data was collected within a period of 90 days (September 2019- December 2019).

Result of the findings

The result of the findings was explained using table as well as discussion of the result in the table. Table 1 explain the socio-demographic characteristics of the respondents. This is necessitated by the fact that human personality and idea varies and there is need to examine this as well as their response to the research study

Results from Table 1 revealed that all the respondents from the universities were given equal percent of the research instruments which is the semi-structured questionnaire. On the age of the respondents, the study shows that most of the respondents were within 19-22 years as they constitute 55.8% followed by 29.1% of respondents who were within 23-26 years and the least among the respondents are those above 27 years as they make up just 2.7% respectively. The result also revealed that there were more female respondents as against the male respondents. The academic level of the respondents revealed that 24.2% of the respondents were in 200 level and for a 4-year programme, 40.4% of the respondent are in their penultimate year of study (300 level) and 24.5% of the respondents are in 400 level. However, the respondents in 500 and 600 level make up 8.7% and 2.2% respectively.

Table 1: Socio-demographic characteristics of respondents

Table 1: Socio-demographic Characteristics of respondents		
Socio-demographic characteristics of respondents	**N= 450**	**%**
Name of University		
University of Benin	150	33.3
Ambrose Alli University	150	33.3
Benson Idahosa University	150	33.3
TOTAL	**450**	**99.9**
Age		
15-18 years	56	12.4
19-22 years	251	55.8
23-26 years	131	29.1
27 years +	12	02.7
Total	**450**	**100.0**
Gender		
Male	144	32.0
Female	316	68.0
Total	**450**	**100.0**
Academic level		
200 level	109	24.2
300 level	182	40.4
400 level	110	24.5
500 level	39	08.7
600 level	10	02.2
Total	**450**	**100.0**

Source: Fieldwork 2019

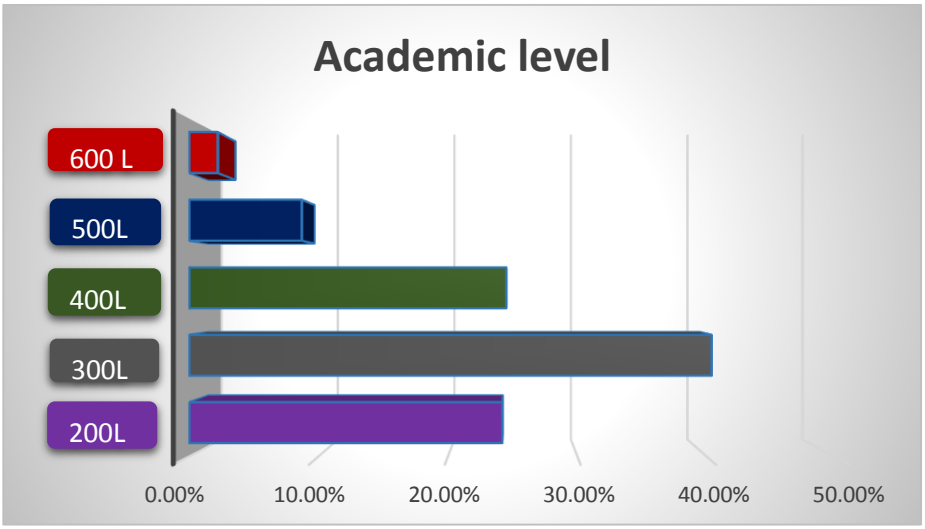

Fig. 1. Academic level of respondents

The results from Table 2 revealed that there are various technological gadgets within the university corridor for student utilization. These technological gadgets include mobile phone, laptops, mobile tablets, electronic marker board, projectors, desktop computers and printers. However, among the gadgets, the most prevalent was mobile phone and the least was electronic marker board. The results also revealed that 93.1% of the respondents agreed to have access to the listed modern technological gadgets prevalent in their university, while 6.9% of the respondents disagreed to the assertion above. In terms of utilization of the technological gadgets, 93.1% of the entire respondents agreed to have used one or more of the listed technological gadgets while 6.9% of the respondents says no. On the frequency of utilization of the technological gadgets, 78.8% of the respondents says always, 3.3% (sometimes), 6.9% (never) and 10% of the respondents were indifferent with their response.

In an interview conducted in the University of Benin, a respondents said;

> The following gadgets are always available within the University of Benin and some of them are handy, they include smartphones, laptops, reading lamps, power banks, printers, public address system and many others. Some of these gadgets are always seen with students either in their rooms, on their way to classes, in their free-time or in class, due to the unique use of these gadgets students cannot do without them. (IDI-Uniben-2020)

Another participant said:

> In my school there are various technological gadgets that are available to student ranging from computers (desktops and laptops), public address system (speakers), televisions with decoders, mobile phones, projectors, digital watches and many other. They are often used because of importance they contribute to the knowledge of the student one of which is to facilitate learning and other social purposes (IDI-BIU-2020)

The participant from the Ekpoma said;

> The gadgets include smart phones, laptops, tablets, desktop computers, digital camera, gaming device and many others; this is due to the fact that usage ranges

from academics to business, fun, crime etc. the usage is on a regular basis (IDI-AAU-2020).

Table 2: various technological gadgets available and utilized by university students

Table 2: Various technological gadgets available and utilized by university students		
What are the various technological gadgets that are prevalent in your university		
Responses	**Frequency**	**Percentage**
Mobile phones	246	54.7
Laptops	57	12.7
Tablets	34	07.6
Electronic marker board	08	01.7
Projectors	23	05.1
Desktop computer and printers	15	03.3
** others	67	14.9
TOTAL	**450**	**100.0**
Do you have access to the aforementioned technological gadgets		
Yes	419	93.1
No	31	06.9
Total	**450**	**100.0**
Have you used any of the technological gadgets in recent time		
Yes	419	93.1
No	31	06.9
Total	**450**	**100.0**
In what frequency was the technological gadget used		
Always	359	79.8
Sometimes	15	03.3
Never	31	06.9
Can't really say	45	10.0
Total	**450**	**100.0**

Source: Fieldwork 2019; **= more than one of the aforementioned gadgets.

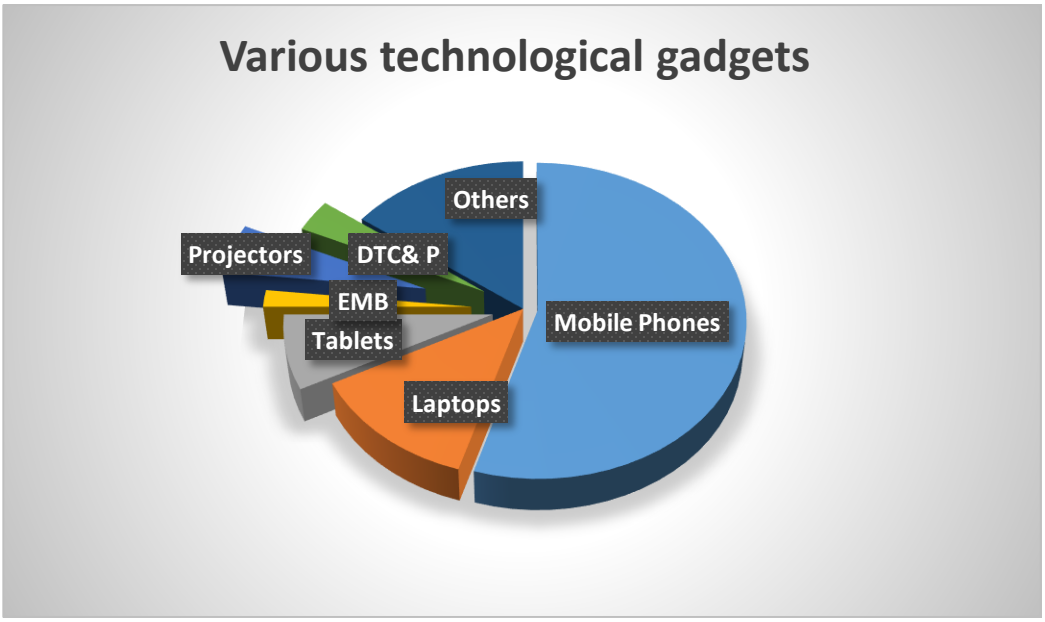

Fig. 2: list of various technological gadget available to students

Table 3 examine the frequency of gadgets usage and the aim for which it was used. The results revealed that majority of the respondents agreed that they always used the said gadgets depending on the ownership of the gadgets as they constitute 65.3%, while 8% of the respondents said sometimes and 5.8% said rarely. However, respondents who were not specific with their response constituted 20.9%. Still on the result, it is revealed that the actual time for the usage of the gadgets ranges from daytime (54.9%) as they constitute the highest among the entire respondents, while those that says night time constitute 14.4% and the respondents that said "anytime they are less busy" constitute 30.7%. In knowing the personal reasons for using the technological gadgets, social/relationship, academic and information took the front burner as they make up 22.4%, 20.4% and 19.2% respectively. Others include, businesses (8.4%), communication (16%) and the least among them was discovery with 6.4%. However, 7.2% of the entire respondents selected more than one aim for using technological gadgets as their responses were classified as "other".

Concerning their perception toward student's usage of technological gadgets, social relationships and crime/fraud were assumed to be leading the trail with 31.8% and 29.3% respectively. Academic constitute 17.3%, business (10.7%), information/communication make up 4.7%. for respondents that gave or selected more than one option, they constitute 6.2% of the entire respondents.

In buttressing the frequency and the aim of technological gadgets usage, one of the participants said;

> I think is always used by the students especially when it is handy, and the students find it useful based on what the gadgets are used for. For me, I use it daily for both business and academics that never exclude communication, therefore my smartphone is always with me. The laptops and reading lamps are always stationary due to the security situation of my environment, off-campus, so I use them whenever am home, those are strictly for academics and accessing information online (IDI-UNIBEN-2020).

Another respondent said;

> Most students often misplace their priority, as on the average, most students spend their time on gadgets mostly the handy ones when they are supposed to be reading their books and doing assignments (however, it depends on what they are doing with the phones, laptops, because some may be accessing the internet with it). I think personally there is a two-way side to the analysis, but it depends on the students and their intent and importunity (desire) for acquiring the gadgets in the first place (IDI-BIU-2020).

A respondent said;

> Due to the impact the gadgets have on the students, they are likely to always be with them on regular basis. This impact can be academic for the serious students, business for the business conscious students, communication and information for the student that are socially freaked, fraud for the student that are criminally inclined and lot more. It all depend on the motive behind the acquisition and usage (IDI-AAU-2020).

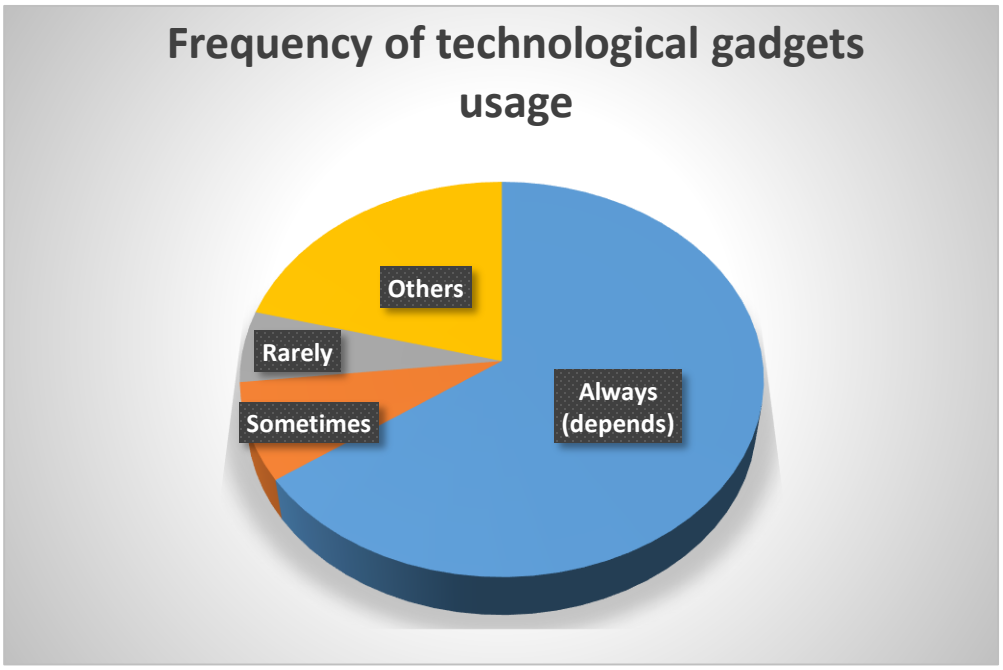

Fig. 3: Frequency of technological gadgets usage

Table 3: Prevalence and utilization of technological gadgets by university students

Table 3: Prevalence and utilization of technological gadgets by university students		
How often do you utilized the modern technological gadget at your disposal		
Responses	**Frequency**	**Percentage**
Always depending on ownership	294	65.3
Sometimes	36	08.0
Rarely	26	05.8
** others	94	20.9
TOTAL	**450**	**100.0**
At what particular time do you think students use the aforementioned gadgets		
Day time	247	54.9
Night time	65	14.4
Anytime they are less busy	138	30.7
Total	**450**	**100.0**
Why do you use the technological gadgets mentioned above		
Academic	92	20.4
Social/relationships	101	22.4
Business	38	08.4
Discovery	29	06.4
Communication	72	16.0
Information	86	19.2
*Others	32	07.2
Total	**450**	**100.0**
Why do you think students use modern technological gadgets		
Academic	78	17.3
Social relationship	143	31.8
Business	48	10.7
Crime/fraud	132	29.3
Information/communication	21	04.7
*Others	28	06.2
Total	**450**	**100.0**

Source: Fieldwork 2019; *=More than one intention **= Unspecified frequency

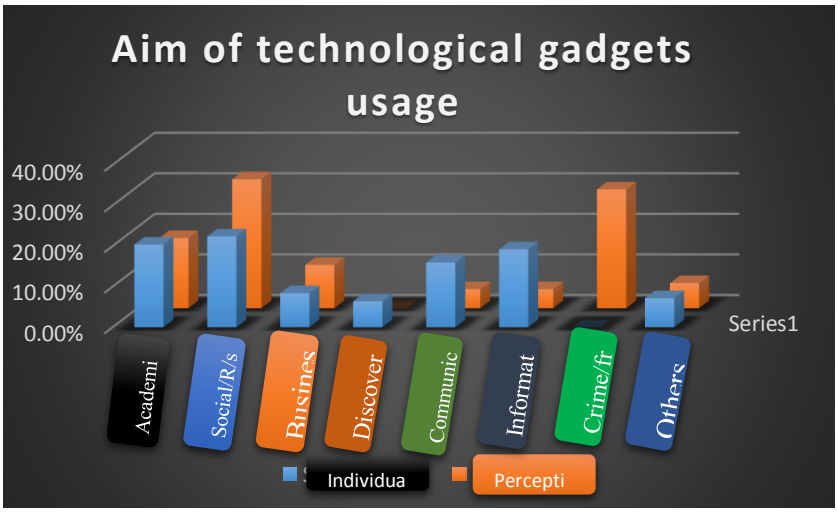

Fig. 4: Aim of technological gadgets usage

Table 4 explains the impact of modern technological gadgets on student behaviour as well as it nexus with their academic performance as 94.7% of the entire respondents agreed that modern technological gadgets has an impact on the behaviour of the students, while 3.3% and 2.2% of the respondents totally disagreed or gave '*conditionalities'* for acceptance on whichever decision they make. On how the gadgets affect the behaviour of the students, the respondents affirmed the following; leading to serious addiction, increasing the desire to be more inquisitive, increasing social isolation among students as well as limiting physical relationship. Others includes; reducing social moral, destroying the social life of students and instilling criminal tendency on dubious students.

The result also revealed that 96.9% of the entire respondents agreed that modern technological gadgets affect students' academic performance, of this 83.1% claimed that the impact is positive, 2.7% said negative while 14.2% were indifference with their response. On how it affects the academic performance of the students, the result reveals that 25.5% of the respondents agreed that it has increase students desire to know more while 23.6% of the respondents affirmed that it makes knowledge acquisition faster and easier. 19.5% of the respondents also affirmed that it has boosted information communication among students and 12.8% agreed that it act as distraction to student when abused and this has a dire consequence on their academic concentration and performance. On the students that claimed that when it becomes an addiction, it can lead to a downturn on the students' academic performance, they constitute 3% and 15.6% of the respondents gave more than one of the option above as their response were classified as others

In an interview conducted in knowing the relationship between technological gadgets and students' academic behaviour as well as their academic performance, a respondent said:

> Gadgets plays a mixed role in students' academic performance; for some it is being of great help while others it is the biggest distraction. It boils down to what purpose the students use it for. I can say 60% of students get carried away with social pleasure of some of these gadgets and neglect the academic role it has played. It affects the students' academic performance both positively and negatively, depending on what purpose it serves for such student (IDI-UNIBEN-2020).

Another student gave a quite different view when he said:

> There are impacts on both student's behaviour and academic performance, from my personal observation, majority of students don't see gadgets as learning aid, but as either business tools, social tool for connecting or crime tool (cybercrime, fraud). Only a few utilize their gadgets for educational purpose. On this I would say the effect is negative (IDI-AAU-2020).

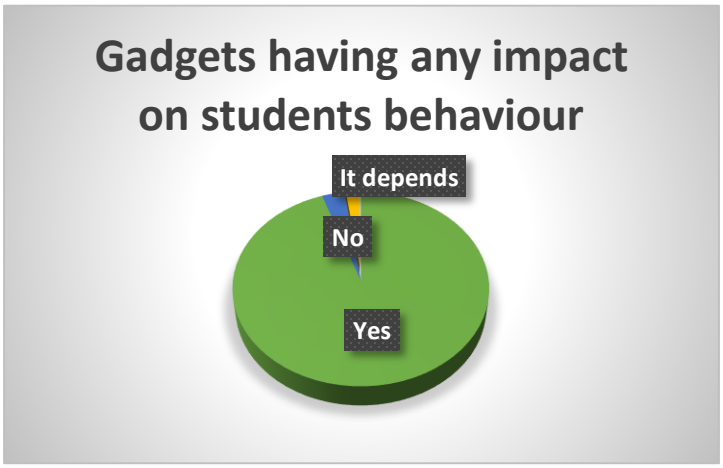

Fig. 5: knowledge of gadgets on students' behaviour

Table 4: Impact of modern technological gadgets on students academic performance

Table 4: Impact of modern technological gadgets on university students academic performance		
Do you think modern technological gadgets has any impact on student behaviour		
Responses	**Frequency**	**Percentage**
Yes	426	94.7
No	14	03.1
It depends	10	02.2
TOTAL	**450**	**100.0**
If yes, how		
It has led to serious addiction	58	13.5
It may increase the desire to be more inquisitive	92	21.4
It has increase social isolation among students	73	17.0
It limited physical relationships	23	05.3
It has reduces social moral	33	07.7
It can also destroy the social life of students	35	08.1
It may instil criminal tendency on dubious students	52	12.1
** Others	64	14.9
Total	**430**	**100.0**
Does modern technological gadgets affect student academic performance		
Yes	436	96.9
No	14	03.1
Total	**450**	**100.0**
Is the effect on academic positive or negative		
Positive	362	83.1
Negative	12	02.7
It depends	62	14.2
Total	**436**	**100**
If yes, how		
It increases students desire to know more	111	25.5
It make knowledge acquisition faster and easier	103	23.6
Boost information communication among students	85	19.5
Act as distraction to students when abused	56	12.8
Addiction causes a downturn on students' performance	13	03.0
**others	68	15.6
Total	**436**	**100.0**

Source: Fieldwork 2019; **=More than one option

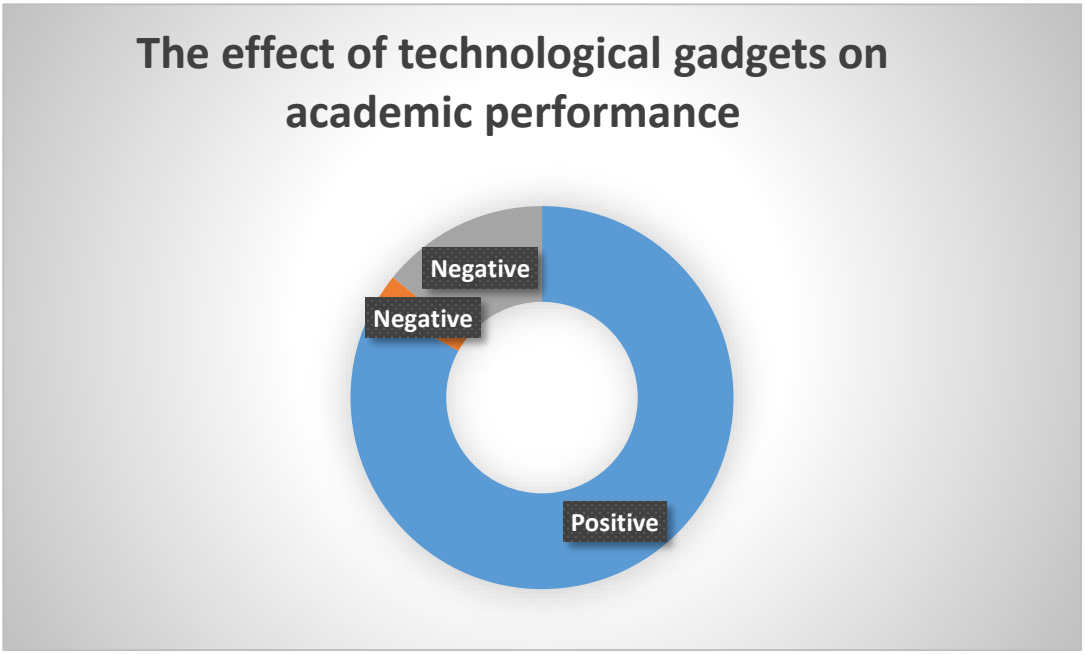

Fig. 6: Effect of technological gadgets on academic performance

Conclusion

The study observed that technological gadgets have been used by students for various purposed and where it is abused or not equitably utilized often create distraction and the latent effect often affect their aim of coming to school in the first place. Studies have also shown that when the primary purpose for which the students were admitted in the first place is missed out, little or nothing is said to be relevant especially when the gadgets utilized changes or alters the personality of the student from good to bad.

Recommendation

Based on the findings of this study, the following recommendations are made;

1. Institutions should restrict personal technological gadgets utilized by students especially during academic period of learning, as this often act as a distraction to the concentration of students when they should actually be listening and learning.
2. Outside the lecture period, students should be encouraged to engage themselves in inquisitive ideals that will boost their knowledge in the academic field for which they were admitted and also broaden their horizon on relative issue.
3. Academics (lecturers, researchers etc.) should teach the students the benefit of using technological gadgets that are educationally inclined to research on academic material and findings that will give them an edge against their peer when opportunity arise.
4. Parents should ensure to monitor their children or wards and their activities on the internet especially when they notice a change of attitude, friends and their academic, as this will help the student to redirect his/her steps toward attaining academic excellence.
5. On-campus activities that often keep students busy during the school hours and act as distraction be it religious, social, entertainment etc., should be curtailed by the school management and ensure to penalize erring student caught, as this will act as deterrent to others who will want to toll the same route as those punished.

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