

Access to GSM and Students' Academic Performance in Secondary School of Osun State, Nigeria

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This paper examines access to Mobile Phone (GSM) and its effects on students' academic performance in secondary schools in Osun State, Nigeria. The sample of the study comprised ten (10) students each from ten (10) senior secondary schools making a total of 100 respondents randomly selected across the study areas. The instruments used to collect data were the GSM Access (GA) and Academic Performance (SAP) structured questionnaire. Two hypotheses were formulated and analyzed using Pearson Product Moment of correlation coefficient and t-test statistics. The result showed correlation between student's use of GSM (Mobile phone) and their academic performance. The study equally revealed that there is no significant relationship between access to GSM (mobile phone) and student's academic performance and also there is no significant difference between the GSM (Mobile phone) and students' academic performance of public and private schools. The results of the two hypotheses showed that the calculated values are less than t-table values (H_{01} : $t\text{-cal.} = 0.1955$, $t\text{-table} = 1.000$, H_{02} : $t\text{-cal} = 0.308$, $t\text{-table} = 0.960$.) respectively. Therefore, the paper recommends that; teachers, parents, school management and all the stakeholders in education industry are to strictly monitor the activities of students and discourage the usage of this device to avoid academic distractions as it contribute more of negative values than the positive ones to education in secondary schools.

Keywords: Global system for mobile communication, academic performance, senior secondary school students, mobile phone, Nigeria.

INTRODUCTION

The invention and development of telecommunication in the world began in the 1830s. The first commercial electrical telegraphy was constructed by Sir Charles Wheatstone and Sir William Forthergill Cooke [1] and they both devise as "improvement to the existing electromagnetic telegraphy" [2]. Samuel Morse on the other side of the Atlantic Ocean independently developed another version of electrical telegraphy that he unsuccessfully demonstrated on 2nd September, 1837. Thereafter, Alfred Vail developed another version of the technology and this was successfully demonstrated on

6th January, 1938. The first transatlantic telegraphy label allowing transatlantic telecommunication for the first time was viewed successfully completed on 27th July, 1866. Alexander Bell invented the conventional telephone in 1876 and the first commercial telephone services were set-up in 1878 and 1879 in both Haven and London [2].

However, Nigeria has not been left out of this race for rapid development of telecommunication, although the journey to success in the milieu had been long and tortuous. The development of telecommunications facilities in Nigeria began in 1886 when a cable connection was established between Lagos and London by the colonial administration [3]. From the very beginning, it was clear that the introduction of telephone services in the country was not induced by economic or commercial motives. It was not meant to enhance economic growth, but it was originally developed as a tool for colonial subjugation [4].

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For this reason, by 1893, government offices in Lagos were provided with telephone service, which were later extended to Ilorin and Jebba in the hinterland. A slow but steady process of development in the years that followed led to the gradual formation of the nucleus of national telecommunication networks [1]. However, as the European mercantile activities gained foothold in the country, the first commercial trunk telephone service was established to link Ibadan and Calabar in 1923. Between 1946 and 1952, a three channel line carrier system was commissioned between Lagos and Ibadan and was later extended to Oshogbo, Kaduna, Kano, Benin and Enugu. Thus, connecting the colonial office in London with the commercial centers in Nigeria [1,3]. In those early days, services were primitive and the coordinated pegboard switching system was used. This later progressed to manual switchboards of different sizes, shapes, and capacities until stronger exchanges were installed into the national network at Lagos Island, Ikeja, Ebute Meta, Apapa and Port Harcourt between 1955 and 1960. The telegraphy service also witnessed a parallel development, from telegraph delivery by way of manual coordinated pegboard switching to the use of Morse code for telex switching. As at 1960, a manual telex exchange of sixty subscriber lines were in service in Lagos. All the above efforts were essentially aimed at improving internal administrative telephone services in Nigeria.

At independence in 1960, with a population of roughly 45 million people, the country only had about 18,724 phone lines for use. This translated to a Tele-density of about 0.5 telephone lines per 1000 people. The telephone network consisted of 121 exchanges of which 116 were of the manual (magneto) type and only 5 were automatic. Between independence in 1960 and 1985, telecoms services become commercialized in Nigeria. The old department of Post and Telecommunications (P and T) under the Ministry of Communications became separated and Nigeria External Telecommunications Limited (N.E.T) was created to take care of external telecoms services while the old P and T handled internal network [5]. By January 1985, the erstwhile (P and T) Post and Telecommunications divisions merged with NET to form Nigeria Telecommunication Limited (NITEL) a government owned Limited Liability Company.

The objective of establishing NITEL was to harmonize the planning and coordination of the internal and external communications services, rationalize investments in telecoms development and provide accessible, efficient and affordable services. NITEL, the only national monopoly operator in the sector, was synonymous with epileptic services and bad management which made telephone usage then to be unreliable, congested, expensive and customer unfriendly. According to Ajayi [1], the years 1992 to 1999 was tagged as the partial liberalization era, when government embarked on market – oriented, partially liberalizing the Nigerian telecommunication sector via Nigerian Communication

Commission (NCC) Decree 75 of 1992. The reforms include separation of the policy – making body from industry regulator and networks operators/service providers, and licensing of network operator service providers which began in 1996. Despite the huge potentials offered by the Nigerian telecom market, progress was slow due to political uncertainties and perceived policy inconsistencies as NITEL still continued to retain monopoly of power over voice telephony in both national and long distance international calls [1,3,6] both argued that this period was dominated by chaotic, hopeless and frustrating circumstances. The Network was bad, there was weak infrastructural base, huge unmet demands, concentration of lines in selected urban centers, slow growth of subscriber base as well as limited investment.

Emergence of GSM (Mobile Phone) In Nigeria

The Nigeria's telecom sector witnessed a major revolution in 2001 with the granting of the Global System for Mobile Communication (GSM) license to providers. The target of National Economic Empowerment and Development Strategy (NEEDS) and the Nigerian Communication Commission (NCC) for the telecommunication sector include; Attainment of Tele-density (number of telephone lines in relation to population) of 1.25 by the year 2008. Prior to this, Nigeria maintained an unenviable record as the world's third lowest, after Mongolia and Afghanistan, with a Tele-density of 0.73% before 1999 [7]. This essentially can be achieved with the advent of mobile telecommunication (GSM) that has resulted in a dramatic increase in the total number of lines from 866,782 in 1999, to over 60 million lines, in year 2008 out of which GSM operators accounted for 57, 622, 901 lines, fixed line operators accounted for 2,537,504 code division multiple access, CDMA, operators connected 780,938 lines [6]. This recent drive in telecom reform policy initiatives has made noticeable impacts on Nigeria.

Structure of Nigeria Telecommunications Sector

Traditionally, the main players in the Nigeria telecommunication sector are; the Federal Government of Nigeria (FGN), Ministry of Communications, Nigerian Communication Commissions (NCC) and the telecommunication service providers. The FGN role in telecommunication in Nigeria has been very direct one; owner and operator of the incumbent public telecommunication firm. This was shifted with the deregulation of the telecommunication sector in 1992 with the establishment of a regulatory body, the NCC. Since then, the NCC has been in control of telecommunication licensed issuing to private telephone operators which authorizes private telephone operators to roll out telephone services. This has led to issuing of

GSM licenses to the first set of GSM operators; Mobile Telecommunication of Nigeria (MTN), Econet Wireless Nigeria (EWN), which in 2004 changed to Vee Networks of Nigeria, Vmobile, and was acquired by Celtel in 2006, and currently acquired by Airtel Nigeria and M-Tel (Nigerian Mobile Telecommunications Limited, the mobile subsidiary of the National Carrier, Nigerian Telecommunications Plc, NITEL) in 2001 while Glo (Globacom Limited) joined in 2003. In addition to these national and private telephones operators, are some small private Operators (Multi-Links Telecommunications Ltd, Odu'a Telecoms (O'Net) and Intercellular Nigeria Ltd. Operating in certain part of the country such as Lagos. These primarily deployed fixed Wireless technologies and are used by businesses and high net worth individuals while some large companies, such as Shell Nigeria, constructed their own private radio communications networks [8]. The structure given above has tremendously improved telecommunication services in Nigeria.

Mobile-Phone (GSM) Communication and Education in Nigeria

The mobile-phone communication benefits education at several levels. Its effects on secondary school students learning are both positive and negative. Operationally, it makes class management, including attendance and administration, easier and more effective as this will enable the teachers and the school head to communicate effectively with both students and their parents. On the time-management level, it enhances coordination between teachers and students. As Tracy [9] wrote, history is full of records of reckless and daring exploits of young man, some of which have resulted in great good and others in great evil. Some effects of mobile phone on students' performance at the Secondary School level also include:

- a. contact with their parent while in school.
- b. To trace easily the teachers, classmates for solutions to educational problems.
- c. To use internet to search out the useful information.
- d. To use the mobile as minicomputer.
- e. To use dictionary and thesaurus.
- f. To listen F.M radio for entertainment.
- g. To find out the translation of verses of Holy Books, and
- h. To make photos and movies though which usually negate the academic performances of young mind.

On the other hand, mobile-communication activities in classrooms have negative aspects, including cheating, harassment, delinquency distraction (lack of concentration), immorality and time wasting. Additional problems emerging from use of GSM in schools include; damage to attention span, critical-thinking skills, and respect for learning and teachers. Students who are

distracted lose the ability to concentrate, to plan, and to work with complex ideas and sometimes seem to reflect a general decline in civility.

According to Ansari [10], it has a number of negative and unhealthy impacts and effects on students' academic performances at the secondary schools level which includes the waste of time and money, its vibration and use may be harmful to health. Awaz [11] argued that Sir William Stewart in his book "Mobile Phones and Base Stations" narrated that exposure of radio frequency causes great absorption of energy in the tissues of head which is harmful to nervous system. Vibrations of mobile phones also have effects on the pumping of blood. Heat of mobile phone also causes skin problem, rays from tower are also harmful and it is suggested that towers should be 16 KM away from population. According to Awaz [11] mobile phone affects the social life and health of all society members as well as secondary schools students. Some other effects in his view are as follows:

- a. It is a cause of disturbance to secondary students when they are busy in their lecture or projects in class rooms or libraries.
- b. It seems that it may cause increase in decline of moral values. With the use of mobile phone, now students feel no shy to tell a lie. When they are sitting in hotel or park, they tell to their parents or teachers that they are sitting in the library.
- c. Loss and misplacement of mobile phone is very common. The student who loses his/ her mobile phone also undergoes tension and this affects their studies.

Quraishi [12] has pointed out another negative impact of mobile phone on students "learning by saying that most of the students write the abbreviations while messaging to others. The same habit has been developed, and they use the same abbreviation in solving the papers in the examination hall. They write "U" "2" "Btw" "Becoz" "R" and "BV" instead of "You" "two/to" "Between" "because" "or/are" and "wife" respectively, which is a wrong way of writing. With Assertions of Quraishi and Awaz, we discovered that mobile phone (GSM) has negative effects on students which are serious enemy of academic performance compared to the positive contributions which it has made to the educational growth of the students.

Objectives of the Study

The general objective of this study is to examine the effect of GSM usage on the academic performance of secondary school students in the selected schools of Osun State. Specifically, this research work intends to examine:

1. The level and the source of their access to GSM usage
2. The performance of students in the selected subjects

Table 1. The result of student's access to Mobile phone (GSM) is shown below.

GSM access	Frequency (N)	Percentage (%)
High	68	68
Moderate	20	20
Low	12	12
Total	100	100

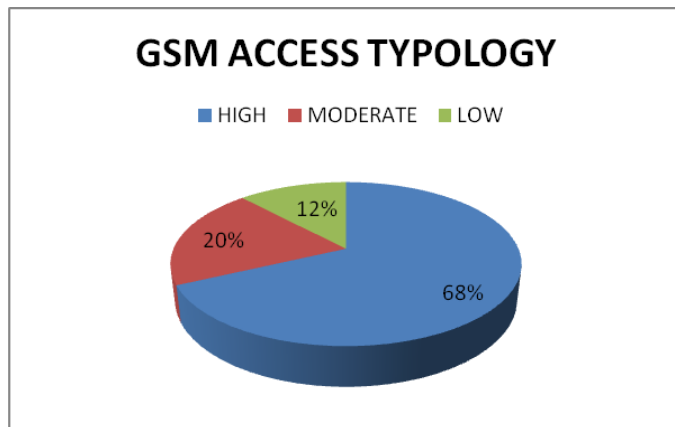


Figure 1. GSM access typology.

Research Questions

The following research questions were raised in the study:

1. What is the level of student's access to Mobile phone (GSM)?
2. What is the level of student's academic performance in some selected subjects?

Hypotheses

H₀₁. There is no significant relationship between access to GSM (mobile phone) and student's academic performance.

H₀₂. There is no significant difference between the students' academic performance of public and private secondary schools.

METHODOLOGY

The method adopted in this work was a descriptive survey. The survey method was considered appropriate for this study because it is used to investigate phenomenon in their natural setting so as to examine the true nature of the subject under discussion. The sample of this study was made up of students of selected secondary schools

in Osun State. A sample of ten senior secondary schools were selected from the population using simple random sampling technique and ten senior secondary school students in each of the ten secondary schools selected using purposive sampling techniques spread across the three senatorial districts of the state. Thus a total of 100 students respondents were used for the study.

A self constructed questionnaire was used in order to elicit information from senior secondary school students for the research work. The validity of the instrument was ensured by four experts, from departments of Educational Administration and Planning and Guidance and Counseling. The reliability of the instrument was assured through a test re-test method which yielded a correlation co-efficient of 0.68. This was considered reliable enough for use.

Frequency counts, percentage scores and Pearson Product Moment of Correlation Coefficient were used to determine the access of students to GSM usage and their performance in some selected subjects, and t-test were used to test for the students' academic performance. Data collected were analyzed using statistical package for social sciences (SPSS).

Definition of Terms

Access to GSM: This implies the level of students' access to GSM usage including its sources.

Academic performance: The level of students' academic success in their various subjects.

RESULTS AND DISCUSSION

Question 1: What is the level of student's access to Mobile phone (GSM)?

Table 1 and figure 1 shows that 68 percent of the respondents have access to Mobile phone (GSM), in all the ten selected senior secondary schools in the study area. From the data therefore, it is clear that larger percentage (68%) of students in the senior secondary schools have high access to GSM. While lower percentages of 20% and had moderate and low access respectively.

Question 2: What is the level of Student academic performance in some selected subjects?

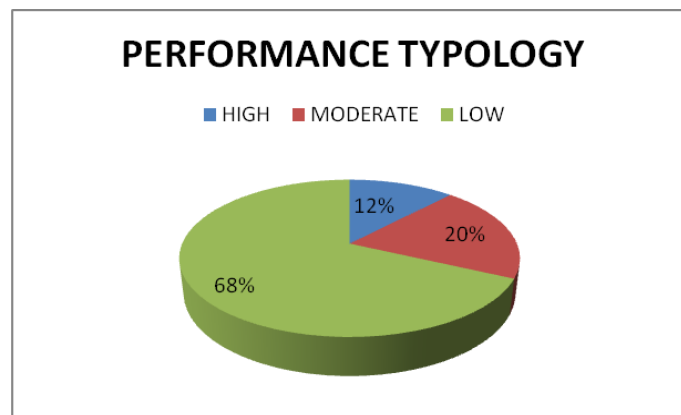
The analysis of academic performance of students are (table 2 and figure 2) are based on 5 credits and above as high performance, 4 credits and below as moderate and low performances respectively.

Table 2 and figure 2 revealed that 68% of the students had low (poor) performance in their selected subjects

H₀₁: There is no significant relationship between students'

Table.2 The analysis of academic performance of students.

Academic Performance	Frequency (N)	Percentage (%)
High	12	12
Moderate	20	20
Low	68	68
Total	100	100

**Figure 2.** Performance typology.**Table 3.** Correlation coefficient of students access to GSM (Mobile Phones) and Students, academic performance.

Correlation	t-calculated	t-table
Students' GSM Access	0.1955	1.0000
Students' and Academic Performance	0.1955	1.0000

Table 4. Analysis of students' academic performance in public and private secondary schools

Variable	N	Mean	SD	DF	t-cal	t-table
Public	80	53.06	8.84			
Private	20	57.52	14.41	148	0.308	0.960

while about 12% performed high and 20% performed moderately.

access to Mobile phone (GSM) and student's academic performance in Osun State secondary schools.

In order to test this hypothesis, relevant data collected on students' academic performance with the use of students' promotional examinations results for two years are coded as follows; 5 credits and above 3 points, 4 credits 2 points, below 4 credits 1 point. These points were computed as weighted mean using the number of

students that did the examination. Pearson correlation was used to determine if there was relationship between the mobile phone (GSM) access and student academic performance. The results of the analysis were presented in table 3.

Table 3 showed that access to GSM was not significantly related to students' academic performance. The hypothesis is therefore accepted, hence, there is no significant relationship between the GSM access and students' academic performance. This is in line with Ansari [10] study which revealed that Mobile phone (GSM) has several numbers of negative effects on both health and academic performance of the students, most especially in the secondary school level. Therefore, students' access to GSM had no positive correlation with their academic performances.

H₀₂: There is no significant difference in students' access to GSM Mobile Phones and their academic performance in public and private secondary schools.

The results presented in table 4 shows that students' access to GSM in private schools have a mean score of 57.52 on academic performance while their counterpart in public schools have a mean score of 53.06. The table further revealed that t-cal (0.308) which is less than the t-table (0.960) at significant level of 0.05. Therefore, the null hypothesis which says that there is no significant difference between private and public secondary schools in Osun state with regards to students' academic performance, is accepted.

CONCLUSION AND RECOMMENDATION

The aim of this study was to establish whether there is correlation between the access to GSM (Mobile phone) and students' academic performance in senior secondary schools. The results have demonstrated clearly that significant relationship does not exist between students' access to GSM (Mobile phone) and students' academic performance.

Therefore, from the above results and the study of Ansari [10] on effects of GSM on the students' academic performance, we concluded that; GSM usage has not for any way contributed to academic achievements of students in Osun state secondary schools at all, rather it has done more damages and harms. This is because the device is adding more negative values than the positive ones which include disturbance to secondary students when they are busy in their lectures or works in the class rooms or libraries, increase in decline of moral values, negative health implications, waste of precious time on night calls and many others.

Parents, Teachers, and School administrator-managements should strictly discourage the usage of GSM in schools, most especially student of secondary schools to enhance the cognitive ability and to channel

their focus towards academic excellence. Government should enact a law with proper monitoring by ministry of education and all the stakeholders in the education sector that will make use of GSM a serious offence in secondary schools. Non-governmental organizations with the help of Guidance and counseling unit of each school should organized seminars, workshop, symposium etc to orientate the students and their parents on the various negative effects of GSM usage in school on students' academic performance.

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REFERENCE

- [1] Ajayi GO. A century of Telecommunications Development in Nigeria – What next? <http://file:///F:/telecom/Nigeria.htm>. 2008; P. 7.
- [2] International Telecommunication Union Bulletin, 1999, P. 6.
- [3] Adegboyegba OA. Seven years of Telecoms Revolution - Hallow! This is how it all began. Tell magazine of Nigeria, 22 March, 2008; P. 28.
- [4] Mazango EM. Media Games and Shifting of Spaces for Political Communication in Zimbabwe. Available at: http://www.wmin.ac.uk/mad/pdf/zim_art3.pdf Date accessed, 2008.
- [5] Salawu A. A foundational Pavadigm of Development and development communication in Africa. J. Soc. Develop. Publ. Health, 2004: 1(1): 57 - 71
- [6] Ndukwe E. Seven Years of Telecoms Revolution. Tell Magazine of Nigeri. 22 March, 2008; P. 27.
- [7] Okereocha C. Seven Years of Telecoms Revolution. One Revolution: A Thousand Gains. Tell Magazine of Nigeria. 22 March, 2008; P. 28.
- [8] Doyle C, Shane MC. On the design and implementation of the GSM auction in Nigeria – The world's first ascending clock spectrum auction. Telecommunicat. Pol., 2003; 27: 383-405.
- [9] Tracy F. Making Language Work, London: McGraw-Hill Book Company. www.ntcpk.com 2006.
- [10] Ansari R. Harms of mobile phone. Afkar-i-Mualim, May 2007. Lahore: Tanzeem- i-asatiza. 2007.
- [11] Awaz CDS. Harms of mobile phone towers. Multan: Awaz CDs. CDS 2008.
- [12] Quraishi S. Mobile phone key text messages. The Daily Jang Lahore. 24 June, 2008; P. 12.