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INFLUENCE OF INTERNET USAGE ON ACADEMIC PERFORMANCE OF SENIOR SECONDARY SCHOOL STUDENTS IN ZARIA EDUCATIONAL ZONE, KADUNA STATE

BY

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Abstract

The purpose of this study was to investigate the Influence of Internet use on Academic Performance of Senior Secondary School Students in Zaria Educational Zone, Kaduna State. Descriptive research design using survey method was adopted. The population for the study was drawn from six (6) senior secondary schools with a population of 5853 students in Zaria, Sabon Gari and Giwa Local Government Areas in Zaria Educational Zone, Kaduna State, Nigeria. Of these, three hundred and fifty (350) senior secondary school students were randomly selected as the sample for the study, using proportional sampling technique. The instruments used for the collection of data were questionnaire and students' examination results for six (6) subjects. The data collected were statistically analyzed using One Way Analysis of Variance (ANOVA, at 0.05 level of significant. The result revealed that students who spent short time on the internet performed better in their examinations than those who spent longer time, and than non-users. This implied that the amount of time spent on the internet had significant effect on academic performance of senior secondary school students. Recommendations were made based on the result.

Introduction

The master of all technologies, in recent times, seems to be Information and Communication Technology (ICT). At the centre of information and communication technology is the internet and this has great potentials for changing human lives. It also has profoundly affected the lives of families and their children especially the adolescents (Frost 2006).

Adolescence is the period of transition between childhood and adulthood and involves biological, cognitive and socio-emotional changes. They are categorized as: early adolescence (10 or 13-15 years), middle adolescence, (15-17 years) and late adolescence (18-19 years) (Santrock 2005). Middle adolescence corresponds to senior secondary school years and includes most changes at puberty. Children at this age are experiencing the technological

revolution with increased use of computer and internet.

According to Bako (2006), the internet is a collection of computer network that operate based on common standard and enable the computers and the programmes they run to communicate directly. It is an international network of computers linked up to exchange of information across the world (Ogunsanya 2007). The adolescents are able to access and download academic information that may not be readily available to their teachers. This they believe help progress in class work and academic excellence and improve employment prospects for qualified youths (Santrock 2004). According to Woodard (2000) among 15-17 years old, 50 percent used the internet for 6 hours a week or more. They engaged mostly in sending and receiving e-mails, visiting chat rooms and accessing adult sexual materials and other

inappropriate information (Anderson, 2002). The internet holds a great deal of potential for increasing adolescents' educational opportunities. However, it has limitations and dangers on the adolescent's academic performance and creativity and needs parents and teachers to monitor and regulate adolescents' use of it (Donnerstein, 2002).

Epunam (1999) defined academic performance of a child as the learning outcomes of the child which includes the knowledge skills and ideas acquired and retained through their course of study within and outside the classroom situations. Jimoh (2005) explained that despite the benefits of internet and television to academic performance, researchers, educators and parents were concerned that it was not accessible to all students. Heavy viewing (10-20 hours/week) 1½ hours – 3 hours/day was negatively correlated with oral and written language development (Clement 1985). Papadekis (2001) examined the effects of internet use on academic outcomes of teenagers but the results were inconclusive as it was discovered that the benefits depend on variety of factors like subject matter and the children's intelligence. The findings revealed that children who used the internet more showed greater gains in reading test scores, but not in mathematics test scores. The present study intends to determine the influence of internet use on the whole academic performance of heavy, light, and non users.

The researcher noticed that special concerns have emerged about adolescent's access to information on the internet, and television. Adults marveled at the dexterity of young people in primary, secondary and tertiary institutions as they manipulate the keyboard, mouse and print out documents on the websites.

There are two extreme views about the influence of internet on academic performance of adolescents. At one extreme they are seen to motivate them to learn and become more exploratory in solving problems. At the other end they are blamed as a source of all contemporary ills as most information on the internet are not well organized or regulated (ILO, 2004). It is speculated that an average Nigerian youth spent about 6-7 hours on the internet daily, some do all night browsing. Approximately 1½ hours to 3 hours per day is significant

amount. Light viewing could be said to be 30 minutes to one hour daily (3½ hours to 7 hours weekly), because this could be done at leisure hour when it will not affect the adolescents academic work or housework. However, 4 hours daily (28 hours weekly) to 7 hours daily (49 hours weekly) of using the internet is heavy and extensive as the time that should be spent reading or in class would be greatly affected. (Larson and Verma 1999).

In Nigeria it was affirmed by National Foundation for Family Research (NFFR) (Awake, 2002) that adolescents engaged in unprofitable cyber relationship, sending and receiving e-mail and chatting with strangers. They were exposed to pornography and violence materials. Internet and television have taken adolescents away from the printed media and books. One study carried out by Huston, Siegle and Bremer, (1983) found that children who read books and the printed media used internet less than those who did not. Adeniyi (2006) discovered in her study of effect of internet on interpersonal relationship that computer literate students spend sleepless time on the internet rather than on rest. Lack of rest causes physiological discomfort and stress often reported among internet addicts and leads to lack of concentration in school. In view of the fact that academic performance is a behavior that may be conspicuously noticed if a young person is deficient, this study sought to determine how this behaviour is affected by these technological excitements.

Objective of the study:-To ascertain the influence of time spent using internet on the academic performance of heavy, light, and non users.

Research Question:- What are the differences between the academic performance of heavy, light and non users of internet.

Hypothesis:-There is no significant difference in the academic performance of heavy, light and non users of internet.

Methodology

Population for the Study: - The population for this study comprised of all adolescents in senior secondary schools in Zaria, Sabon Gari and Giwa Local Government Areas of Kaduna State,

21,449 in number, from twenty five (25) senior secondary schools.

based on school examination and continuous assessment.

Sample Size and Sampling Technique:-

Two senior secondary schools each were randomly selected from Zaria, Sabon Gari and Giwa Local Government Areas in Zaria Educational Zone using hat drawn method of random sampling techniques. These made up the six (6) senior secondary schools from the existing twenty five (25) senior secondary schools in the area. The population of the six schools was five thousand eight hundred and fifty three (5853) according to Ministry of Education, Planning, Research and Statistics Department Headquarter, Kaduna. Three hundred and fifty (350) respondents were used as sample for this study based on Krejcie and Morgan (1970)'s recommendation that three hundred and fifty (350) is accepted for a large population and that five percent (5%) of the selected population is alright. Proportional sampling technique was used to select sample for this study as described by Miles (2001) that it gives every member of the population equal and independent chance of being selected or included in the sample.

Instruments for Data Collection:-

The instruments that were used for data collection for this study were:

- a. Questionnaire
- b. Students' archival records, that is, teacher's assessments

Reliability of the Instrument

The split half method was selected within the Statistical Package for the Social Sciences (SPSS) for testing reliability coefficient to determine the internal consistency of the responses to the items on the questionnaire used for the pilot study. The reliability coefficient obtained was 0.835 and the internal consistency coefficient obtained for the instrument was 0.794. These were considered adequate proof of the reliability of the instrument.

Procedure for Data Analysis: Data collected were statistically analyzed using descriptive statistics like frequencies, percentages, mean and standard deviation. The Null Hypotheses involved in the study were tested using Analysis of Variance (ANOVA) because of the three (3) independent groups (heavy, light and non-users) involved in the study. It was used to compare differences among the means of the groups. The Hypothesis was tested at 0.05 level of significant

Data Presentation and Analysis

Analysis of data and the interpretation of findings in the study were carried out on the basis of formulated research question and null hypothesis. The findings are presented on the tables that follow.

Table 1: Length of Time Respondents Spent Daily/Weekly on the Internet.

Time Spent Daily/Weekly			Internet usage	
S/No.	Daily	Weekly	Freq.	%
a	Light users			
	30mins-1hr/day	3½ -7 hrs./week	90	25.7
b	Heavy users			
	1½ -2 hrs/day	10½ -14 hrs./week	92	26.3
c	3-4 hrs/day	21-28 hrs/week	20	5.7
d	4-5 hrs/day	28-35 hrs/week	16	4.6
e	6-7 hrs/day	42-49 hrs/week	09	2.6
f	8 hrs. and above/day	56 hrs and above/week	10	2.9
g	None (Non users)		113	32.2
	Total		350	100

Table 1 shows the length of time respondents spent daily/weekly on the internet. The table indicates 147(42.5%) of the respondents were heavy users of internet. This could be seen from the

breakdown of the students who claim to spent between 1½ - 8 hours and above on internet daily which added up to 10½ - 56 hours and above weekly.

Influence of Internet use on the Academic Performance of Senior Secondary School Students.

Table 2 Summary of Average Score of Students' Achievement Scores

Score Range	Internet Use		
	Heavy	Light	Non-Users
70-100	03 (2.1)	03 (3.3)	02 (1.8)
60-69	13 (8.8)	08 (8.9)	12 (10.6)
50-59	54 (36.7)	31 (34.5)	41 (36.3)
40-49	59 (40.1)	37 (41.1)	41 (36.3)
0-39	18 (12.3)	11 (12.2)	17 (15.0)
Mean	43.40	53.50	48.52
Total Sample Size	147	90	113
Percentages	(100)	(100)	(100)

The figures in parentheses are the percentages

KEY

70-100	=	Excellent
60-69	=	Very Good
50-59	=	Good/Average
40-49	=	Fair/Below Average
0-39	=	Poor/Fail

Table 2 revealed the differences in the performances of the three groups of heavy, light and non-users of internet. Two point one percent (2.1%)(three of the students out of the 147 total populations of heavy users of internet) scored 70 and above. It was the same three (3.3%) light users, while two (1.8%) of non-users of internet scored 70 and above. For score range 60-69, 13 (8.8%) and eight (8.9%) were recorded from heavy and light users respectively as against 12 (10.6%) from non-users. However, for heavy and light users of internet 54 (36.7%) and 31 (34.5%) scored between 50.59. While 41 (36.3%) had the same range of scores among non-users of internet.

For score range 40-49, 59 (40.1%) and 37 (41.1%) were recorded for heavy and light users of internet respectively while 41 (36.3%) from non-

users of internet scored in the range of 40-49.

Eighteen (12.3%) and 11 (12.2%) from heavy and light users of internet respectively scored 39 and below but 17 (15.0%) from the non-users of internet scored 39 and below. On the whole heavy and non-users had a mean score of 43.40% and 48.52% respectively which is below the mean score of 53.50 by light users. Based on the analysis so far discussed from Table 2 it could be inferred that differences existed among the academic performance of heavy, light and non-users of internet. This was because light users of internet seem to perform better than heavy and non-users. Heavy users had the least mean scores.

The summary of the mean scores in each subject examined is presented in Table 3.

Table 3: Table of Means Scores of Respondents for the six (6) subjects examined

S/No	Courses Examined	Internet		
		Mean Scores		
		Heavy Users	Light Users	Non-0Users
1	English	45.2	54.4	51.8
2	Mathematics	42.8	54.5	45.6
3	Geography	42.9	54.2	51.2
4	Biology	41.3	49.0	49.8
5	Chemistry	43.02	52.5	46.1
6	Physics	45.2	56.5	46.6
	TOTAL MEAN	43.40	53.50	48.52
	N=	147	90	113

KEY

70-100

60-69

50-59

40-49

0-39

=

=

=

=

=

Excellent

Very Good

Good/Average

Fair/Below Average

Poor/Fail

Table 3 showed the result of mean scores of the three groups of heavy, light and non-users of internet under study in the six (6) subjects examined. Among the three groups light users of internet made a higher mean score of 54.4% in English, Mathematics 54.5%, Geography 54.2%, Chemistry 52.5% and Physics 56.5% while the mean score recorded for non-users was 51.8% in English, Mathematics 45.6%, Geography 51.2%,

Chemistry 46.1% and Physics 46.6%. Heavy users had the least mean scores in these subjects with a score of 45.2% in English, Mathematics 42.8%, Geography 42.9%, Chemistry 43.02% and Physics 45.2%.

Null Hypothesis (H₀) states:

There is no significant difference between the academic performance of heavy, light and non user of internet.

Table 4 Analysis of Variance on Difference in Academic Performance of Respondents Based on Internet Use

Source of Variation	Df	Sum of Squares	Mean Square	f Ratio	f Prob.	f. Critical	Remarks
Between groups	2	3078.8556	1539.4278	5.0374	.0072	3.48	S
Within Groups	347	74872.466	305.6019				
Total	349	77951.3221					

Decision Rule

F – calculated > f: critical – H₀ rejected
(P < 0.05) H₀

In table 4 the value of the computed ratio was 5.0374 at the alpha level of 0.05 . The f. critical (f-crit) was 3.48 Since the calculated value of f (5.0374) f.cal. is greater than f-critical(3.48), and the p-value f-probability level of significance (.0072) is less than 0.05 (P < 0.05) at 2; 347 degree of freedom ,the null hypothesis of no significant difference is rejected, which implies that there are significant differences in the academic performances of heavy, light and non-users of internet.

Discussion

The main objective of this study was to investigate the influence of internet use on academic performance of senior secondary school students. From the result of the analyzed data collected from students test and examination assessment scores administered to the students by the researcher, some variables have emerged which could be considered as significant influences of internet use on academic performance of senior secondary school students in Zaria educational zones.

The study revealed that light users of internet seemed to perform better academically than heavy and non-users, followed by the non-users. Heavy users had the least academic performance which was revealed in their various mean scores in Tables 2, 3, and 4. The light users of internet had the highest mean score of 53.50 followed by non-users with a mean score of 48.52% and heavy user with the lowest mean score of 43.40. The difference between the mean scores of the three groups of internet users is significant. The fact that heavy users had the lowest mean score confirmed the previous research by Malley (2003) and Barley (2003) who discovered that there was little evidence that adolescents were doing better academically because of use of internet. These observations also confirmed to the findings of Jackson et al (2003); Valkenburg (2004), Santrock (2005) and National Academics (2006) who indicated that internet has positive effects on the adolescents' academic outcomes. However, this study has further thrown light on the fact that the positive outcomes depend on the length of time spent on the internet. Furthermore, this study has confirmed the previous research by Adeniyi (2006) who discovered that some computer literate students spent time for leisure on the internet and this led to lack of concentration in schools.

The excellent performance of light users was supported by Otokhine (2002), Barley (2003) and Brant (2003) that internet and computer when used well allowed adolescents to tap into vast store of knowledge, facilitate progress in class work in colleges and led to increased academic excellence.

Conclusion

The following conclusions could be drawn from the findings reported in this study. It was noticed from the findings that the heavy users spending up to one and half hour to eight hours per day on internet had the least mean scores in academic performance among light and non-users. This implies that what adolescents learned from internet cannot compensate them for what they would gain from reading and other sources of information. This calls for understanding and special responsibility on the part of parents, the adolescents themselves, the media, educators, child psychologists, sociologists, family and child

development specialists, communication researchers and government, to direct, control and guide adolescents in use of internet, in order for them to excel in their academic performance.

Recommendations

1. From the findings of this study, the following recommendations are proffered: Educated parents and those who have access to computers should learn to become computer literate to teach the adolescents appropriate online behavior, block objectionable materials and access to harmful sites, and teach them responsible use of resources on line.
2. Parents should have access to their children's e-mail account and check their e-mail and websites they have visited.
3. Adolescents are advised to use the internet only with their parents' permission and within the time limit given, and always tell their parents about any frightening communications.
4. Producers and media executives need to recognize how powerful their messages are to adolescents and work with experts on adolescents development to provide more positive images to youths about the use of internet.
5. Teachers should teach clear goals on use of internet and operational guidelines regarding time use, adult supervision and problem solving.

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