Gender Variation, Internet Accessibility and Students Academic Performance

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Abstract: *The role played by the Internet in improving student performance cannot be overemphasized. However, the world is more concerned about gender equality and the poise of fixing this disparity. Therefore, it is necessary to investigate the relationship between gender variation and access to the Internet with respect to secondary school students' academic performance. This study adopted a survey research design involving a multistage sampling method. A structured questionnaire was used to collect data from 300 secondary school students from each of Ogbomosho Metropolis' five local government areas in Oyo State, Nigeria. According to the findings of the study, 68.3 percent (205) of respondents had Internet access, while 31.7 percent (95) did not. Men made up 76.7 percent of the 205 respondents who had Internet access. Academic performance did not differ significantly between male and female respondents. Gender variation and Internet access have a significant combined influence on student success in agricultural science (F (2,297) = 37.082, P<0.05), while gender variation has a positive significant effect on agricultural science achievement (=.511; t=10.301; p<0.05). Internet access was also associated with higher levels of agricultural science achievement (=.090; t=1.801; p0.05). Internet access was also positively but not significantly associated with achievement in agricultural science (=.090; t=1.801; p>0.05). As a result, it is possible to conclude that there is a need to increase female students' Internet access and encourage adolescents to use the Internet to improve their academic performance.*

Keywords: gender, Internet, academic performance

Introduction

The Internet has quickly become a critical communication tool in the global information society (Hick and Halpin, 2001), as cited in Adegoke (2012). The rapid advancement of technology has resulted in improved communication connectivity and cost savings. As a result, the Internet is now more accessible to a larger number of individuals. Since the Internet is now accessible to a large proportion of the Western world's population, numerous educational institutions have capitalized on its instructional potential.

For students completing schoolwork or assignments, the Internet is a valuable source of information. There is much educational information available on the Net: Information/Education materials on various subjects, Agricultural Science inclusive, which can facilitate learning, Agricultural Science Portal E-learning/Collaborative Learning (e.g., four lecturers attending to the same students on Net consecutively) Synergy of thoughts on many subjects E-Library-where ample materials on Agricultural Science are available (library in several locations and schools), online tests/evaluation of performance in chosen Agricultural Science areas, Latest Research Information/Report in Agriculture, Access to other schools' learning environments and materials in addition to what is learnt in the classroom, as well as learning materials available on CD-ROM on a subject basis in Agricultural Science, can all improve students' performance in agricultural science if used correctly. A browser, which is a computer application that lives on a computer, is required to use a computer to view the WWW and access the Internet.

Mozilla Firefox and Google Chrome are the world's top "graphical browsers"; they enable the viewing of graphics such as images and movies. MacWeb, Opera, Internet Explorer, and Netscape are among more browsers. To find any information on these aforementioned platforms, one would need to use a good search engine like www.google.com, www.ask.com, Bing.com, yahoo.com, MSN.com, Mamma.com, www.search.com, and www.devilfinder.com. As there are numerous sites dedicated to delivering educational material, it also functions as a great tool for teachers to construct lesson plans. It also provides as a place for time and distance independent group conversation. There are numerous types of group discussions. These include video conferencing, in which members of a group can see and hear each other by using a small video camera and microphone.

The level of internet usage is influenced by a variety of things. This inequality has been related to factors such as income, class, gender, race, educational level, and geographical region (Norris, 2001). Gender concerns, in particular, have piqued the interest of researchers. Several studies have claimed that men dominate Internet access and usage. Nachimas and et al. (2000) discovered gender inequalities in Internet usage in 2000, with males using the Internet more frequently and extensively. Males also spent more time on the Internet, indicating preferred sites for use, downloading resources, creating websites, and participating in discussion groups. Sherman, End, Kraan, Cole, Campbell, Birchmeier, and Klausner (2000) and Madell and Muncer (2004) found support for the masculine bias. Madell and Muncer (2004) discovered that men use the internet more than women, are more likely to have their own e-mail account, and spend more time accessing the Internet than women. Numerous studies show male dominance in attitudes and

Internet usage, while a few studies produce contradictory results. The gender gap in Internet use has recently narrowed, according to Wong, Ng, and Hanafi (2008). Gender is not a significant variable in Internet use, according to Odell, Korgen, Schumacher, and Delucchi (2000). Luan, Fung, and Atan (2008) discovered that female students spend the same amount of time as male students when it comes to Internet usage and attitudes among student instructors at a public Malaysian university. Their findings revealed a minor, if not nonexistent, gender disparity in internet usage among respondents. They also claim that the gender gap has been closing in recent years. Shaw and Gant (2002) found comparable results.

Agriculture is critical to the prosperity of all countries. It is an important part of the Nigerian economy and the economies of other developing countries since it provides food for both humans and livestock. It is also a source of income for humans, creates employment opportunities for humans, provides raw materials for agro-allied industries, provides materials for clothing, and is a source of income for the nation's foreign exchange, providing materials for shelter, which leads to the provision of recreational and tourism facilities. O.A. Iwena (2008). Furthermore, numerous studies have shown a recent decline in the academic achievement of Nigerian secondary school students (particularly in agricultural science) (Uwadiae, 2005). Because of this tendency, some people believe that the country's educational standards are deteriorating. According to Jaiyeoba and Akintepede (2002), there is a declining standard in education, as evidenced by students' consistent low test performance, and the problem is caused by students' failure to remember what they have learned. Stigmatization, dropout, and failure to meet stated goals are among the severe consequences of academic underachievement (Salami, 2001).

According to Gesinde (2004), low examination performance has a detrimental impact on candidates. According to Aremu (2003), bad academic performance is defined as falling below the expected standard by the examinee and some other important. According to Aremu (2000), academic failure is not only frustrating for students and parents; it has far-reaching consequences for society in terms of a labor shortage in all sectors of the economy and policies. As a result, socioeconomic factors such as poverty (Internet exposure), parental literacy level, social amenities/facilities available (laptop, 3G. phones, cyber cafés, electricity, etc.), and the primary source of information dissemination (both print and electronic media) can influence access to the Internet to obtain information on agricultural science, which may affect student performance.

The impact of internet use on students' academic performance at the tertiary and secondary school levels has been investigated. However, there has been little progress in addressing gender disparities in Internet access. As a result, gender differences, internet accessibility, and academic performance were investigated in this study. The study specifically addressed the following issues:
1. What is the proportion of students who have access to the internet?
2. Is there any statistically significant relationship between gender variation and internet accessibility?
3. What is the composite effect of gender variation and internet accessibility on student achievement?
4. What is the relative effect of gender variation and internet accessibility on student achievement?

Methodology
For this correlative study, a survey research design was used. The target audience for this study was S.S.2 students in Ogbomoso Metropolis. The subjects were chosen because they did not require an examination. The samples for this investigation were chosen using a multi-stage sampling process. Secondary schools in Ogbomo Metropolis were divided into strata/groups using a stratified sampling technique. The five local government areas comprise the Ogbomoso metropolitan area (Ogbomoso South, Ogbomoso North, Oriire, Surulere, and Ogo-Oluwa). Two schools from each local government were chosen to produce ten (10) sample schools, and thirty (30) S.S.2 students from each school with gender sensitivity were chosen to make a total of 300 samples. Data was collected using two instruments. The Internet Browsing Pattern Questionnaire was included in the first instrument (IBPQ). This is divided into two sections: Section A includes student demographics, while Section B includes items that elicit information about Internet usage. The purpose of this study is to investigate students' awareness of Internet browsing and use, as well as their impact on academic achievement. The agricultural achievement test was the second tool (AAT). This featured 50 objective test items derived from the themes specified in the school system for agricultural science work and diaries. These were given to a random sample of 300 senior secondary two (S.S.11) pupils. This study involved 150 boys and girls in total. All of the tools were evaluated for their psychometric qualities. Using the Kuder Richardson 20 (KR-20) formulas, the IBPQ's Cronbach's Reliability coefficient Alpha was 0.805, and the AAT was 0.9531. Frequency, percentage, chi-square test, and multiple regressions were employed as statistical methods.

Results and Discussion
Research Question 1*: What is the proportion of students who have access to the internet?

Table 1: **Analysis of Students Access to the Internet.**

S/N	Student	N	Percentage (%)
1	With Access to Internet	205	68.3
2	Without access	95	31.7
	Total	**300**	**100**

Table 4.1 displays descriptive statistics about students' Internet access was available to 68.3 percent of the students, or two-thirds of the sample, while 31.7 percent did not. Using Chi-square analysis, the difference in Internet access was confirmed to be significant (2 = 37.46, df = 1, p<0.05). This means that many students in the neighbourhood have access to internet gadgets.

Research Question 2: Is there any statistically significant relationship between gender variation and internet accessibility?

Table 2: Analysis of the relationship between Gender Variation and Internet Accessibility

Gender	With Access %	Without Access %	X^2	df	P-value
Male	76.7	23.3	41.81	1	3.84
Female	58.7	41.3			

From table 4.2, the proportion of male students who have internet access is 76.7 percent, while the proportion of those who do not have access is 23.3 percent. Female students have access to 58.7 percent of the time, while male students have access to 41.3 percent of the time. Male students had 76.7 percent access to the internet, while female students had 58 percent access to the internet. Male and female students had significantly different internet access (X2 = 41.81, df = 1, p0.05). Gender differences in Internet use exist, according to Nachimas, Moiduser, and Shemla (2000), with males using the Internet more frequently and extensively. Males also spend more time on the Internet, expressing preferred locations for use, downloading resources, creating websites, and participating in discussion forums. Other research, such as Sherman, End, Kraan, Cole, Campbell, Birchmeier, and Klausner (2000) and Madell and Muncer (2004), supported the masculine bias. Madell and Muncer (2004) discovered that more guys utilize the global Web and are more likely to have their own e-mail address than females and spend more time searching the Internet than females. Numerous research have found male dominance in terms of attitudes and Internet usage, however fewer studies have found alternative outcomes. According to Wong, Ng, and Hanafi (2008), the gender gap in Internet use has lately shrunk. According to Odell, Korgen, Schumacher, and Delucchi (2000), Gender does not appear to be a significant factor in Internet use.

Research Question 3: What is the composite effect of gender variation, internet accessibility on student achievement?

Table 3: Multiple Regression Analysis of Internet Browsing and Gender on student Achievement in Agricultural Science

R	= 0.523
R square	= 0.273
Adjusted R square	= 0.266

Model	Sum of Square	Df	Mean Square	F	P-value
Regression	38340.929	2	12780.310	37.082	0.000
Residual	102015.321	297	344.646		
Total	**140356.250**	**299**			

Significant at p<0.05

Table 4 shows the model summary and ANOVA of the regression of the composite effect of internet accessibility and gender variation on students' achievement in agricultural science in Ogbomoso Metropolis. The multiple regression result shows R = 0.523a,

multiple regression square (R^2) = 0.273, and adjusted R = 0.266. The Multiple Correlation Coefficient of R= 0.523 indicates a positive relationship between the combined predictors (Internet access and gender variation are both related to projected outcomes) (student achievement in agricultural science). In other words, the two variables (Internet access and gender variation) are related to the predicted (agricultural science student achievement), and the correlation is positive but modest (R = 0.523).

More notably, the independent variable interaction accounted for 27% of the variance in students' agricultural science achievement. Table 4.3 also shows that the observed multiple correlation R (0.523) and adjusted R square (0.266) were statistically significant, with F (2,297) = 37.082 and P 0.05, respectively. This demonstrated the importance of the various correlations discovered. As shown in the table, the F ratio is 37.082, and the p-value is less than 0.05; thus, there is a strong linear relationship between Internet accessibility and gender variance in student achievement. In other words, the composite impact means that the predictor variables influence the performance of agricultural science students.

Research Question 4: What is the relative effect of Internet Accessibility, and Gender Variation on Student Achievement?

Table 4: Relative Effect of Internet Accessibility and Gender Variation on Student Achievement

Model	Unstandardized Coefficient		Standardized Coefficient		
	B	Std. Error	Beta	t	p-value
Constant	-44.640	11.196		-3.987	0.000
Use of Internet	.389	.216	.090	1.801	0.073[NS]
Gender	2.032	.197	.511	10.301	0.000*

Significant at $p<0.05$, Not significant at $p>0.05$

Table 4.4 shows the coefficients that illustrate the association between Internet access and gender variation in agricultural science student accomplishment. With =.511; t=10.301; p0.05, the relative effect revealed that gender variation was positively and significantly connected to accomplishment in agricultural science. Internet use was likewise positively but not substantially connected to agricultural science success (=.090; t=1.801; p>0.05). This means that simply gender differences were important.

Conclusion

The study's review demonstrated the link, consequences, and contributions of student Internet access, student gender variation, and students' academic accomplishment in agricultural science in Ogbomoso, Oyo State. There is a statistically significant linear relationship between Internet access, gender variation, and student achievement. In other words, Internet access and gender differences had a significant joint effect on students' academic achievement. Based on these findings, we can conclude that both internet access and student gender variation are important factors influencing student achievement in agricultural science. As a result, these characteristics must be considered when judging students' academic achievement in secondary school.

Recommendation

The following recommendations are made in light of the findings:

i. Both the government and parents should provide students with learning opportunities. Similarly, Internet access should be available in all secondary schools to improve students' performance by allowing them to interact with the academic world via web browsing.

ii. ii. Teachers and parents should supervise students' Internet usage and encourage them to use it for educational purposes.

iii. There should be strict restriction of items posted on the internet, so censorship boards are being urged to solve this issue.

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