



Internet Facilities Utilisation and Undergraduate Students' Academic Performance of Federal Colleges of Education in North Central Nigeria

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Abstract. The study was an assessment of undergraduate students' utilization of internet facilities for academic purpose in the Federal Colleges of Education in North central Nigeria. In achieving the goals of the study, four research questions and two hypotheses were raised. The study employed the cross-section survey research design approach in which both descriptive statistics and the Pearson-chi-square statistical tools were used in analyzing the research questions and hypotheses raised. The study also used the questionnaire for internet users (QIU) as tool for data collection from the sample of NCE and B.Ed undergraduate students of F.C.E. in North central Nigeria to which the stratified random sampling technique was employed in selection of respondents. Results of data analysis from the study shows that there is a significant difference in the internet literacy/exposure level; amount of time spent on the internet for academic purpose; and extent of utilization of internet facilities for academic purpose among the NCE and B.Ed undergraduate students of the Federal Colleges of Education in North central Nigeria.

Keyword: Internet, facilities utilisation, undergraduate students, academic performance, North Central Nigeria

1. Introduction

In this age of Information and Communication Technology (ICT), the use of the internet has become the norms and culture; developing countries like Nigeria are not exempted from this trend. The craving for the internet stems from its central role in ICT with access to free online Journals, Magazines and other information resources anytime and anywhere for academic research. Nigerian Universities, Polytechnics, Colleges of Education and other Tertiary Institutions, undergraduate find internet very useful for assignments, research including their final year project being an encyclopaedia of information and facts. The convergence of technologies, e.g. Computers and Internet services with database, data bank and files which can be used for academic purpose by stakeholders in education is increasing (Aman, 2003). In the drive in higher education to promote the use of information and communication technology (ICT), the role of the internet cannot be over emphasized. The internet provides educationist, scientist, lecturers and students, access to on-traditional sources of information at any point over the globe. It is becoming more and more convenient to access the internet. Trajkovski (2001) stated that about

5 years ago, only three million people were connected to the internet in the whole world, but now this number has grown to 300 million. The gap between the rich and the poor countries is now being replaced with the digital divide between those who can afford to be connected to the internet and those who cannot afford to be connected to the internet.

In developing countries the internet has stood as one of the fastest means of retrieving and disseminating information amongst students, lecturers, and researchers in higher institutions. This has brought significant changes in the access of electronic information resources used in teaching and learning in these institutions. However, in the developed countries, the ICT situation is better than what we experience in the developing countries. According to Nwogu and Anunobi (2007), members of the academic community apply internet information to every academic work namely; research, teaching, improving knowledge and class work assignment. The situation in Nigerian higher institution may not have being so, as a result of inadequate ICT infrastructure. Despite this there have been reported findings of the use of internet in academic achievement in Nigerian higher institution. According to Ugah and Okafor (2008) findings on the use of cyber-café for internet access show that 60% of the respondents use cyber cafés to gain access to internet facilities, students, lecturers, and researchers in Nigeria are aware of the impacts of internet, hence, according to Chiemeké and Umar (2007) findings on users perceptions of the use of academic libraries and online facilities for research shows that 150 out of 200 respondents use the internet for research. According to Nwogu and Anunobi (2007) study on use and evaluation of internet resources, students use the internet as their first source of information resources. Nwagwu, Adekunbe and Bello (2008) also found out that 92.7% respondents use the internet for educational purpose and 42.9% also use for leisure purpose. They also attach great importance to internet resources, as is the case in other countries. This was agreed by Musakali and Mutula (2007) who showed that in Kenya, the internet use among universities has greatly improved research activities in universities. Furthermore, in India,

Safdar, Mohmood and Qutab (2010) conducted a research on internet use behaviour and attitudes of colleges' students, the findings shows that 48% of respondents use the internet to update their knowledge. The internet is very important to undergraduate students in Nigeria, in helping them to have access to timely accurate and relevant information. At present, universities libraries in Nigeria experience under-funding that makes it very difficult for them to subscribe to enough journals and to buy enough textbooks to support the curriculum. Hence, students and academic institution access the internet to obtain information which libraries cannot provide on their shelves (Adomi, Omodeko & Otoló, 2004). Despite the vast sources of information and resources on the internet, there is a low ICT usage in Nigeria (Yusuf, 2006; Ololube & Egbezor and 2007). However, numerous researchers (Parker, Chan and Sunder, 2007; Ololube, Obogo and Egedi, 2007; Neo 2000) have reported that economies such as the United States of America, Canada Germany, Japan, the United Kingdom, France, Italy, Singapore and Taiwan used ICT widely and have been benefiting from its usage. Despite Modum (2005) report that the impact of computers in teaching and learning in Nigeria institutions is increasing, there is the need for consistent studies to monitor its utilization especially for academic purpose. According to the study by Global Information Technology as reported by Olalube, Ubogu & Egbezor (2007), USA stands at the top of the list of countries measured based on their level of preparation to participate and benefit from ICT development whereas Nigeria contest 90th out of the 115 economies that were surveyed between 2005-2006. Similarly, a study by Nigerian Information Technology Professionals in America in 2002 indicated that it may take Nigeria 50 years to catch up with America on the aspect of personal computer count per household (Yusuf, 2006). In view of the foregoing, this study aims at investigating the extent to which internet facilities are being used by undergraduate students in the Federal Colleges s of Education in North central Nigeria.

2. Statement of the Problem

The use of internet facilities had become essential tool for teaching-learning process in education system. Both the teachers and students adopt internet facilities for note taking, assignment, research, community services and teaching. However, the problem of study focused on the need for adopting internet facilities, the extent of the usage and the impacts on the students' academic performance in Federal Colleges of Education in North Central Nigeria.

3. Purpose of the Study

The study is aimed at assessing the extent to which undergraduate students utilize internet facilities for academic purpose in the Federal Colleges of Education in North central Nigeria. Specifically the study aims at achieving the following objectives:

- To find out the internet literacy/exposure level between NCE and B.Ed. undergraduate students of the Federal Colleges of Education in North central Nigeria.
- To determine the time spent on the internet for academic purpose among NCE and B.Ed. undergraduate students of Federal Colleges of Education in North central Nigeria.
- To examine the relationship in the extent to which the internet is used for academic purpose among NCE and B.Ed. undergraduate students of Federal Colleges of Education in North central Nigeria.
- To find out the challenges of undergraduate students in the utilization of internet facilities for academic purpose in the Federal Colleges of Education in North central Nigeria.

4. Research Questions

In order to provide direction and sharpen the focus of the study, the following research questions were formulated to guide the researchers:

- What is the internet literacy/exposure level between NCE and B.Ed.

undergraduate students of the Federal Colleges of Education in North central Nigeria?

- What is the duration of time spent on the internet for academic purpose among NCE and B.Ed. undergraduate students of Federal Colleges of Education in North central Nigeria?
- What is the relationship in the extent to which the internet is used for academic purpose among NCE and B.Ed. undergraduate students of the Federal Colleges of Education in North central Nigeria?
- What are the challenges of undergraduate students in the utilization of internet facilities for academic purpose in the Federal Colleges of Education in North central Nigeria?

5. Research Hypotheses

- There is no significant difference in the time spent on the internet between NCE and B.Ed. undergraduate students of Federal Colleges of Education in North central Nigeria.
- There is no significant difference in the extent of utilization of internet facilities for academic purpose between NCE and B.Ed. undergraduate students of the Federal Colleges of Education in North central Nigeria.

6. Method

6.1 Design of the Study

This study employed the cross-section survey design. The cross-sectional design is the type of design that permits the researcher to obtain data from a representative sample of a large population and use the data obtained to describe the population. Cross-sectional research design is known to be an effective tool in determining the opinions, attitudes, preferences and perception of respondents used in a study so it was found to be the appropriate design. Also, the cross-sectional survey research was found useful in a situation where the population is large enough and it enabled interpretation, synthesis

and integration of useful data for sound conclusion (Ajayi, 2013). The population of the study consist of 133, 54 respondents comprising 4515 B.Ed. undergraduate students and 8839 NCE undergraduates students of the Federal Colleges s of Education in North central Nigeria. The sample of the study consisted of 1335 respondents comprising 452 B.Ed undergraduates’ students and 883 NCE undergraduate students of the Federal Colleges s of Education, in North central Nigeria. The sample size of 1335 respondents represents 10% of the undergraduate students’ population of the colleges as at the time of this research (2014/2015 Academic Session), following the recommendation of Ibanga (2002) that 10% to 20% of population is ideal for research sample in a survey. Stratified random sampling was employed with the aim of identifying differences that might exist among the samples selected as representatives of the five schools of the colleges. A self-constructed questionnaire was used as instrument for data collection. This instrument termed the Questionnaire for Internet Users (QIU) is a 24 item questionnaire that enquired on the respondents basic bio data, experience of internet utilization, frequency of internet use, average time spent by respondents on the internet, the purpose for which the

internet is being utilized, most frequent problems that are encountered by respondents during internet usage, the influence internet usage has on respondents academic efficiency/activities and level of satisfaction of respondents with the internet facilities at their disposal.

Three experts validated the instrument for content validity, two from educational technology and one from test measurement. These experts judged the adequacy of the items that were included in the instrument. Furthermore, these experts made modifications on QIU to ensure that the instrument was ideal for its intended purpose. Similarly, the measure of internal consistencies (reliabilities) of the instrument was established by using the Cronbach-Alpha method of estimating internal consistency which can be used for instruments having items of varying point values or attitude scale that provides responses such as strongly agree, strongly disagree with intermediate response options. The data generated was analyzed using the descriptive mean and Pearson chi-square for the research questions of the study while Pearson chi-square was also employed for analysis of the two null hypotheses of the study.

7. Results

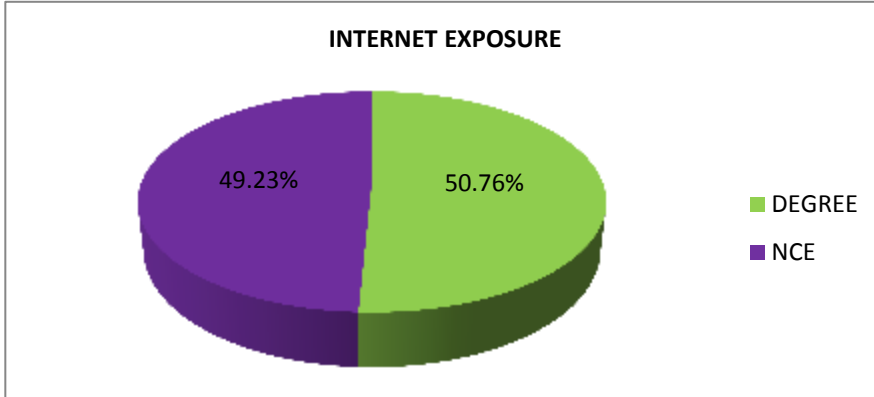
Research Question One: What is the internet literacy/exposure level between NCE and B.Ed. undergraduate students of the Federal Colleges s of Education in North central Nigeria?

Table 1 and figure 1 presents the results of data analysis in respect to this question.

Table 1: Chi-square test on internet exposure level between NCE and B.Ed. undergraduate students of F.C.E, in North central Nigeria.

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	30.000 ^a	25	.224
Likelihood Ratio	21.501	25	.664
Linear-by-Linear Association	1.209	1	.272
N of Valid Cases	6		

Figure 1: The Pie chart indicating level of exposure in percentage between NCE & B.Ed. Undergraduate student of F.C.E in North central Nigeria



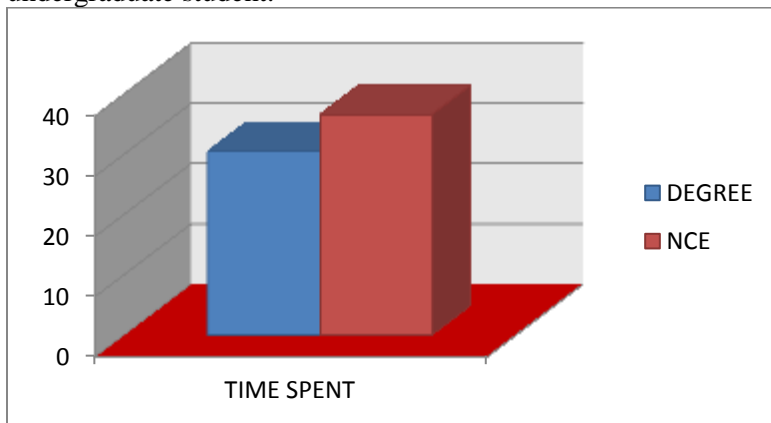
The results from **Table1** and **Figure1** above shows that there is significant difference in the internet literacy/exposure level of NCE and B.Ed. Undergraduate students of F.C.E in North central Nigeria.

Research Questions Two

What is the duration of time spent on the internet for academic purpose among NCE and B.Ed. undergraduate students of Federal Colleges of Education in North central Nigeria?

Figure 2 presents the result of data analysis in respect of the relationship in time spent in the internet by NCE and B.Ed. Undergraduate students for academic purpose

Figure 2: A bar chart showing the relationship of time spent on the internet between NCE &B.Ed. undergraduate student.



The result from Figure 2 above shows that there is significant difference in the time spent on the internet between NCE &B.Ed. undergraduate student of F.C.E, in North Central Nigeria.

Research Question Three

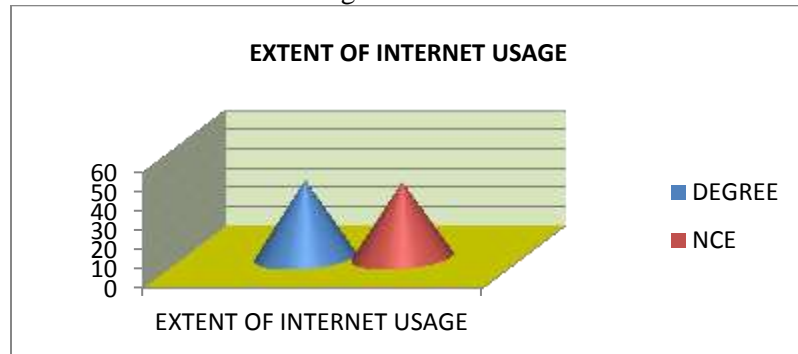
What is the relationship in the extent to which the internet is used for academic purpose among NCE and B.Ed. undergraduate students of the Federal Colleges s of Education in North central Nigeria?

Table 2 and Figure 3 present the results of data analysis with respect to the research questions 3

Table 2: Pearson Chi-Square test on the extent of internet usage among NCE and B.Ed. Undergraduate students of F.C.E in North central Nigeria.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.000 ^a	16	.220
Likelihood Ratio	16.094	16	.446
Linear-by-Linear Association	2.530	1	.112
N of Valid Cases	5		

Figure 3: Cone chart indicating the extent of internet usage between NCE & B.Ed undergraduate students of F.C.E in North central Nigeria



Column1	EXTENT OF INTERNET USAGE	Percentage
DEGREE	40	50.63%
NCE	39	49.36%

The results from table 2 shows that there is a significant difference in the extent of internet usage for academic purpose between NCE & B.Ed students since the Pearson Chi-square value of .220 is greater than the .05 level of significance. Furthermore Figure 3 indicates that there is a higher percentage in extent of internet usage among B.Ed undergraduates compared to their NCE counterparts in F.C.E in North central Nigeria.

Research Question Four

What are the challenges of undergraduate students in the utilization of internet facilities for academic purpose in the Federal Colleges of Education in North central Nigeria?

Table 3 present the results of data analysis with respect to the research questions four

Table 3: Challenges encountered by undergraduate students of F.C.E, in North central Nigeria in utilizing internet facilities for academic purpose.

S/N	Problems Encountered	NCE	B.Ed
	Slow access speed	80%	85%
	Difficulty in finding relevant information	40%	35%
	Overload of Information on the internet	10%	15%
	It takes too long to view/download pages	75%	85%
	Privacy Problems	15%	10%

The result from table 3 indicates that both NCE and B.Ed undergraduate students of F.C.E, in North central Nigeria have more encounter with the problem of internet connectivity speed as is seen in items (i and iv) having 80% for NCE, 85% for B.Ed and 75% NCE, 85% B.Ed respectively.

Hypothesis One

The hypothesis states: There is no significant difference in the time spent on the internet between NCE and B.Ed undergraduate students of Federal Colleges of Education in North central Nigeria. In testing this

hypothesis, relevant data were collected using the research instrument for data collection and results of the data analysis for testing this hypothesis is presented in table 4 below.

Table 4: Pearson Chi-square test on time spent by NCE and B.Ed Undergraduate students, F.C.E, in North central Nigeria.

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	30.000 ^a	25	.224
Likelihood Ratio	21.501	25	.664
Linear-by-Linear Association	1.898	1	.168
N of Valid Cases	6		

From the result of analysis seen in Table 4 the Pearson Chi-Square P-value of .224 is significant at .05 level of significance on time spent on the internet for academic purpose between NCE & B.Ed. Therefore the null hypothesis is rejected

Hypothesis Two

The hypothesis states: There is no significant difference in the extent of utilization of internet facilities for academic purpose between NCE and B.Ed undergraduate students of F.C.E in North central Nigeria. In testing this hypothesis data were collected using the instrument for data collection (QIU) and the result of the data analysis are presented in table below.

Table 5: Pearson Chi-square test on extent of utilization of internet facilities among NCE and B.Ed undergraduate students of F.C.E in North central Nigeria.

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.000 ^a	9	.213
Likelihood Ratio	11.090	9	.270
Linear-by-Linear Association	.625	1	.429
N of Valid Cases	4		

From the results of analysis seen in table 5, the Pearson Chi-square test on extent of utilization of internet facilities among NCE and B.Ed Undergraduate students is significant sine .213 > P-value .05 level of significance.

8. Discussion of findings

The results of data analysis for the study shows that there is a significant difference in the literacy/exposure level between NCE and B.Ed undergraduate students of F.C.E. in North central Nigeria with the B.Ed students showing higher internet literacy level of exposure, this findings aligns with Kaur (2005) findings that more than two third of respondents are exposed to internet facilities for academic purpose. Findings of the study further buttresses Siyanbola and Oladapo (2008) study on uses of internet for academic with further emphasis an literacy/exposure level between NCE and B.Ed

Undergraduate students of F.C.E. in North central Nigeria.

Findings of the study also reveal that B.Ed Undergraduate students spend more time on the internet for academic purpose compared to their NCE counterparts as opined by Chandra (2000) that more than 25% of respondents used the internet 2-3 times a week for communication and information gathering as major purposes for using the internet.

The study also gathered that there is a significant difference in the extent to which internet facilities are utilized for academic purpose among the NCE and B.Ed Undergraduate students of F.C.E. in North central Nigeria in which the B.Ed students show a higher percentage of internet utilization. This findings relates to Kaur (2005) that a majority of students use the internet located at the Colleges for educational and research purpose. Furthermore

this finding aligns with Oyedun (2007) that extent of use of internet facilities have improved to a considerable extent the academic performance of student.

Further findings of the study show that the most prominent of challenges encountered by students in the utilization of internet facilities for academic purpose is the problem of internet connectivity speed. This finding relates closely to Jagboro (2003), Kaur (2005) and Okey (2005) which reveals that poor connectivity due to poor infrastructure is a major constraint to utilization of internet facilities for academic purpose.

Finding of this research has also shown that there is a significant difference in the time spent on the internet for academic purpose between the NCE and B.Ed undergraduate students of F.C.E, in North central Nigeria. Hence the first null hypothesis was rejected. Also, the study revealed that there is a significant difference in the extent of internet facilities utilization among the NCE and B.Ed undergraduate students of F.C.E, in North central Nigeria. This leads to rejection of the second null hypothesis.

9. Conclusion

Based on finding of this research the following conclusions are put forth:

- NCE and B.Ed Undergraduate students of F.C.E. in North central Nigeria are literate / exposed to internet facilities.
- NCE and B.Ed Undergraduate students of F.C.E spend time on the internet for academic purpose.
- B.Ed Undergraduate students of F.C.E. in North central Nigeria have higher literacy/exposure level and spend more time in utilizing the internet for academic purpose, compared to their NCE counterpart.
- Internet facilities are available and being utilized for academic purpose in Federal Colleges s of Education, in North central Nigeria.
- Slow internet connectivity speed due to poor instruction is among the major challenges of internet utilization for

academic purpose in F.C.E. in North central Nigeria.

10. Recommendations

Following the findings of this study it is recommended that students be further encouraged towards utilizing internet facilities for academic purpose through academic activities such as submission of assignments, compulsory enlisting on study chat groups, partaking in on-line research activities so as to enhance exposure/literacy level of students and to enable students interact and compete with their contemporaries all over the world.

Furthermore, students should be allowed free access to the internet facilities of the Colleges to enable them spend more time on the internet for academic purpose.

It is also recommended that academic activities of the Colleges be geared towards maximizing utilization of internet facilities of the Colleges s so as to enhance student's extent of internet facility usage. These can be achieved through the implementation of students' on-line bursary registration, on-line departmental and course registration, electronic seminar presentation and electronic correspondences' between staff and students.

Furthermore, entry requirements into NCE and B.Ed programmes of the Colleges should include a minimum registry of pass in Computer Studies, and students should be encouraged to acquire personal computers as part of study materials they will require in the course of running programmes of the Colleges s.

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