
RELATIONSHIP BETWEEN STUDENTS' ANXIETY AND ACQUISITION OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) SKILLS IN GOMBE STATE, NIGERIA

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ABSTRACT

The study examined relationship between students' anxiety and acquisition of information and communication technology (ICT) skills in Gombe state, Nigeria. Two research questions and one hypothesis were formulated and guided the study. The study adopted predictive correlational design. The population of the study consisted of all the SSII students in Gombe State. 420 students were drawn from the population using multistage sampling technique. Anxiety Questionnaire and ICT skills checklist were used as instruments for data collection. The instruments were validated by three experts. The instrument was tested for reliability and reliability coefficients of 0.87 was obtained using Cronbach alpha. The data collected were analysed using descriptive statistics and linear regression. The results showed that there were more students with high level of anxiety. Similarly, anxiety does not have significant relationship with students' Acquisition of ICT skills. Based on the findings of the study, it was recommended that the School Authorities should introduce and integrate some forms of Computer Based Test in schools' assessment systems in order to acquaint highly anxious and emotionally apprehensive students with the use of ICT facilities to reduce techno-phobia when interacting with ICT facilities for them to acquire ICT skills.

Keywords: Anxiety, ICT, Skills

INTRODUCTION

The use of technology has unpleasant side effects, which may include strong, negative emotional states that arise not only during interaction but even before, when the idea of having to interact with the computer

begins. Frustration, confusion, anger, anxiety, and similar emotional states may affect not only the interaction itself, but also productivity, learning, social relationships, and overall well-being (Bhaskaran & Ashok, 2016). Anxiety is a state of uneasiness, worry or feeling of uncertainty about impending or on-going evaluation program, examination/test. Among the factors that relate to cheating habit, test-anxiety form one of the psychosocial factors under consideration by the Researcher.

Anxiety is defined as the psychological mechanism whereby the current intensification of a dangerous drive results in the elicitation of defenses. George Mandler and Seymour Sarason 1952 as cited in George, & Kira, (2009) developed the theory that anxiety present in testing situations is an important determinant of test performance. Individuals that become highly anxious during tests typically perform more poorly on tests than low-test anxious persons, especially when tests are given under stressful evaluative conditions such as a post- secondary examination. The feelings of forgetfulness or drawing a "blank" are developed because of anxiety-produced interference between relevant responses and irrelevant responses generated from the person's anxious state. The difference in performance of a high-anxious test taker compared to a low-anxious test taker is largely due to the difference in their ability to focus on the tasks required.

The society has undergone three phases of socio-economic development that include; agricultural revolution, industrial revolution and the present information technology revolution. Many countries now consider basic Information and Communication Technology skills as a prerequisite for admission and even employment alongside reading, writing and numeracy (Okoro & Ekpo 2016). However, there appear to be myriads of misconceptions that Information and Communication Technology generally refers to only computers and computing related activities. This is wrong, although computers and their application play a significant role in the modern information management, but Information and Communication Technology is extended to devices such as Radio, Television, Phones, and satellite.

Information and Communication Technology refer to a knowledge applied in the form of tools, equipment and application support which helps in the collection, storage, retrieval, use, transmission, manipulation and dissemination of information to enhance knowledge and developing communication, decision making and problem-solving ability of the user. Some of these ICT tools include radio, television and telephone, computers, satellite, wireless technology and the internet (Mavellas, Wellington & Samuel, 2016). Information and Communication Technology skills refer to the ability of an individual to apply knowledge or experience gained in handling or manipulating internet tools. ICT skills demonstrated by secondary school students may include, among other things; proficiency in handling Microsoft Word, Microsoft PowerPoint, searching and browsing of the internet, spreadsheets skills, database skills, electronic presentation skills, web navigation skills, website design skills, e-mail management skills, digital cameras, file management and windows explorer skills, downloading software from the web (Patankar & Jadhav, 2014).

An observation made have shown that many students in secondary schools in Gombe State experienced difficulty when interacting with the ICT facilities like a computer because of manifest fear or phobia towards the use of these tools. To support this observation, Dangut and Sakiyo (2014) discovered that some students fear to interact with the computer due to worry, depression, anxiety, and emotions. As such, may not effectively interact with ICT facilities. Hence may not acquire the skills associated with interacting with these facilities. Many factors evolved from various studies concerning how psychosocial factors predict the students' acquisition of ICT skills (Akaranga & Ongong, 2013). Some of which are; ICT or computer anxiety, computer self-efficacy, gender, parental influence, peer group pressure, socioeconomic status of parents, availability and utilization of ICT facilities, adequacy of ICT facilities, and school essential facilities. A consideration of these factors as identified by Akaranga and Ongong (2013) indicated that some factors are internal (psychological) while others are external (social). More so, both the psychological and social or environmental factors are known to compositely influence behaviour and thus better predictors of secondary school students' acquisition of Information and Communication Technology skills (Akaranga and Ongong, 2013). Rouse (2015) reported that Information Communication Technology is an umbrella term that covers communication devices or applications that include computers, televisions, radios, networks, satellites, video conferencing and e-Learning. The author added that Information and Communication Technology are always talked about in a particular context, like ICTs in education, libraries, and health. Pelgrum and Law 2003 (as cited in Okoro & Ekpo, 2016) stated that near the end of the 1980s, the term 'computers' was replaced by 'IT' (Information Technology) signifying a shift of focus from computing technology to the capacity to store and retrieve information. This was followed by the introduction of the term 'ICT' (Information and Communication Technology) around 1992, when e-mail started to become available to the general public.

Anxiety as a psychological construct has a predictive power to affect students' acquisition of ICT skills. This is evidenced in the fact that when computers are newly introduced into a system, many users will normally experience anxiety (fear) in using this new technology device. Students' fear in using computers or the tendency to be uneasy and apprehensive towards current or future handling of ICT tools, in general, is called Information and Communication Technology anxiety of the students. Olufemi and Oluwatayo (2014) stated that an individual is considered computer anxious when his or her emotional state reduces the benefits of using the computer and discourages the individual from using the computer when interacting with it. Computer anxiety affects students' knowledge of the acquisition of basic ICT skills. Tekinarslan (2008) posited that inadequate knowledge of computer might increase the level of students' anxiety, which may invariably affect students' ability in the acquisition of basic ICT skills like use of Microsoft Word, Microsoft PowerPoint, searching and browsing of the internet. Computer anxiety may result from the lack of experience from the students in handling ICT tools. This is because as students' acquisition of ICT skill increases, their computer anxiety level decreases (Tekinarslan, 2008). Studies conducted by Agah, Ogbeche, & Okorie (2016) have established the link between computer anxiety and expertise in basic Information and Communication Technology skills which include web design, data management and use of digital camera. Equally, *Osunrinade and Durojaiye (2016)* reported that students who reported medium and high levels of computer anxiety perform worse than those with low levels in

ICT skills acquisition (Copy, cut and paste text in a document). However, much is left unsaid about secondary school students' computer anxiety in Gombe State in which the current studies wishes to fill.

Purpose of the Study

The purpose of this study was to investigate relationship between anxiety and students' acquisition of information and communication technology skills in Gombe State, Nigeria.

Research Questions

The following research questions were answered in this study:

1. What is the level of anxiety among senior secondary school students towards the acquisition of information and communication technology skills in Gombe State?
2. What is the level of skills acquisition of senior secondary school students' in information and communication technology in Gombe State?

1.5 Hypotheses

The following null hypotheses were formulated and were tested at 0.05 alpha level of significance:

H0₁: There is no significant relationship between students' anxiety acquisition of information and communication technology skills in Gombe State.

METHODOLOGY

Correlational research design was adopted for this study. The researcher used questionnaire instrument to study relationship between anxiety and students' acquisition of ICT skills in Gombe state, Nigeria. The study was conducted in Gombe State located in the Northern part of Nigeria. The researcher chose Gombe state for the study because of the state public secondary school students' inability to interact with information and communication technology facilities in their studies and during the conduct of examinations owing to lack of proficiency in information and communication technology is hindering many students to be qualified for admission into higher institutions and even to secure information and communication technology-related jobs in the labour market have necessitated this study. The population for this study comprised all 24,064 Senior Secondary Two (SS II) students in public secondary schools in Gombe State, Nigeria. The researcher decided to use Senior Secondary Two (SS II) students because they form the category of students whose calendar is not disrupted by any external examinations within the first and second term and are also developmentally and socially stable and matured enough to respond to items of the instrument.

The sample for this study was 420 SS II students drawn from the public senior secondary schools across the three educational zones in Gombe State, Nigeria. The sample size was calculated using the Cochran's (1963) sample size formula. The instruments used for data collection were Anxiety Factor Questionnaire (AFQ) and Students' Information and Communication Technology Skills Checklist (SICTSC). The Anxiety (AFQ) is an instrument made up of 12 items. The questionnaire was an adapted version of the "Computer Self-Efficacy Scale" developed by Teo and Koh (2010). It is a 12-item instrument that consists

of three components designed to measure students' self-efficacy in using information and communication technology facilities. It covered basic Computer Skills (BCS), which composed of five items, media related skills (MRS) component with four items and the Web-Based Skills (WBS) which consisted of three items.

The Students' Information and Communication Technology Skills Checklist (SICTSC) is a 30-item instrument developed by Dauda and Isaac (2018) and modified by the researcher. The instrument covered the Information and Communication Technology skills acquisition required by the students at the secondary school level. The skills include, among other things Microsoft Word, Presentation Programs (PowerPoint), Spreadsheets (Excel), Networking (Internet browsing), and Operating Systems (Windows). The items were measured on a modified 5-point Likert scale ranging from 5 = very high level, 4 = high level, 3 = moderate level, 2 = low level, and 1 = very low level. The total score of the items provided the general level of students' acquisition of Information and Communication Technology skills when interacting with the ICT facilities. Copies of the instruments were validated by three experts in. The validators made some useful corrections and suggestions. The researcher was equally advised to reframe all the double barrel items. After effecting the corrections, the reliability of the instruments was determined by administering 30 copies of the instruments to SS II students for trial testing, in one Senior Secondary School in Gombe State. The sample selected did not participate in the actual study. The Cronbach alpha procedure was used to obtain the reliability coefficients for the internal consistency of the administered instruments. The reliability coefficient of 0.87, and 0.65 were obtained for Anxiety Questionnaire (AFQ) and Students' ICT Skills Checklist (ICTSC) respectively. These reliability coefficients indicated a high level of internal consistency which is satisfactory for the study.

The researcher solicited for the assistance of three research assistants, one from each of the selected schools within the study area. The research assistants employed in this study were teachers employed by the Gombe State Ministry of education or Gombe state secondary school Education Management Board and were residing within the selected areas of the study. The researcher also, interacted with the research assistants and enlightened them on how to guide the students on how they will respond to the instruments to hasten the distribution and retrieval of the completed instruments. On the second day of the research, the researcher with the help of the research assistants administered the Anxiety Factor Questionnaire (AFQ) to the respondents in the sampled schools to ascertain the level of students' self-efficacy as contained in the instrument. This took about 30 minutes to complete. After completing the instrument, the researcher together with the research assistants collected and arranged all the completed instruments immediately to ensure that no copy of the instrument was lost.

On that same day of the research, the researcher together with the research assistants administered the second instrument on students' Information and Communication Technology skills acquisition to the respondents to solicit for information concerning students' information and communication technology skills acquisition in all the schools. This instrument took about 25 minutes to be completed by the respondents. After they completed the instrument, all their responses were collected, gathered and kept

sealed in an envelope for onward action by the researcher.

The data generated for this study were analyzed using linear regression model. The research questions were answered using descriptive statistics of mean and standard deviation. On the other hand, the null hypothesis was tested at 0.05 level of significance using linear regression.

The remark for the research questions was guided by the real limits of numbers, which include: Very High Level (VHL) with 4.50-5.00 real limit; High Level (HL) with 3.50-4.49 real limits; Moderate Level (ML) with 2.50-3.49 real limit; Low Level (LL) with 1.50-2.49 real limit; and Very Low Level (VLL) with 0.50-1.49 real limit. The decision rule for testing the null hypotheses was based on comparing the significant value obtained at the 0.05 alpha level. When the p-value was greater than 0.05, the null hypothesis will not be rejected and the conclusion was that there was no significant prediction between the two variables. But, when the p-value was less than 0.05, the null hypothesis was rejected, with the decision that there was a significant relationship between the two variables.

RESULTS AND DISCUSSION

Answering Research Questions:-

Research Question 1: What is the level of anxiety among senior secondary school students towards the acquisition of information and communication technology skills in Gombe State?

Table 2: Mean and Standard Deviation of Anxiety among Senior Secondary School Students towards the Acquisition of ICT Skills in Gombe State

S/N	Item	n = 420	Mean	SD	Remark
1.	I feel anxious whenever I am using ICT facilities like computers.		3.91	1.14	HL
2.	I wish that I could be as calm as others appear to be when they are using computers.		3.43	1.36	HL
3.	I worried much that I cannot use internet to search for information.		3.59	1.15	HL
4.	I feel tense whenever I am working on a computer.		3.53	1.27	HL
5.	I worry about making mistakes on the computer when using Microsoft word.		3.62	1.28	HL
6.	I try to avoid using computers whenever possible.		3.66	1.28	HL
7.	I experience anxiety whenever I sit in front of a computer terminal.		3.71	1.21	HL
8.	I enjoy working with computers/ ICT facilities.		4.01	0.98	HL
9.	I would like to continue working with ICT facilities in the future.		3.70	1.06	HL
10.	I feel relaxed when I am working with ICT facilities like computer.		3.56	1.04	HL
11.	I wish that computers were not as important as they are.		3.71	1.17	HL

Grand Mean**3.68****HL**

From the analysis in Table 1, going by the mean score of 11 items, it could be seen that majority of the students demonstrated a high level of anxiety towards the acquisition of ICT skills in senior secondary schools in Gombe State. The grand mean of 3.68 specifies that the level of anxiety among senior secondary school students in Gombe State is high.

Research Questions Five. What is the level of senior secondary school students' acquisition of information and communication technology skills in Gombe State?

Table 5: Mean and Standard Deviation of Senior Secondary School Students' Acquisition of Information and Communication Technology Skills in Gombe State

S/N	Item	n = 420	Mean	SD	Remark
1.	Turn on/shut down a computer properly		3.60	1.36	HL
2.	Start a computer program		3.94	1.11	HL
3.	Change monitor brightness		3.74	1.24	HL
4.	Minimize/maximize windows on the desktop		3.40	1.30	HL
5.	Perform file management like deleting text from files.		3.34	1.21	HL
6.	Use a 'search' command to locate a file		3.46	1.40	HL
7.	Install a software program		3.63	1.18	HL
8.	Scan floppy disks for viruses		3.59	1.19	HL
9.	Move a file from a hard drive to a USB drive		3.82	1.23	HL
10.	Create a new folder		3.65	1.29	HL
11.	Ability to resize a photograph		3.47	1.28	HL
12.	Save a document		3.60	1.24	HL
13.	Print a document using a printer		3.50	1.11	HL
14.	Create a basic Word document		3.40	1.22	HL
15.	Copy text in a document using key board		3.47	1.30	HL
16.	Change font style in a document		3.68	1.16	HL
17.	Create a basic Excel spreadsheet		3.63	1.13	HL
18.	Create a simple database using Access		3.46	1.31	HL
19.	Create a simple presentation using PowerPoint		3.49	1.12	HL
20.	Download and save a file from the internet		3.60	1.24	HL
21.	Send and receive attachments through e-mail messages		3.61	1.21	HL
22.	Move document from desktop to a flash drive		3.23	1.10	HL
23.	Use the Google search engine to download educational videos		3.19	1.18	HL
24.	Play instructional games using the computer		3.25	1.21	HL

25.	Perform simple Arithmetic with Microsoft Excel	3.13	1.13	HL
26.	Design a simple wedding card using the power point	3.18	1.31	HL
27.	Use a computer to private chart a friend	3.05	1.07	HL
28.	Rearrange data in a sequential order using Excel	3.84	1.39	HL
29.	Renamed a folder from the desktop	3.53	1.38	HL
30.	Drag a file from desktop to a flash drive	3.48	1.26	HL
Grand Mean		3.50		HL

The 420 students' responses on 30 items related to Information and communication (ICT) skills checklist were collated and answered using descriptive statistics of mean and standard deviation as illustrated in Table 2. Similarly, the average mean of 3.50 indicated that the level of senior secondary school students' acquisition of information and communication technology skills in Gombe state is high.

Hypotheses Testing

The null hypothesis guided the conduct of the study was tested at 0.05 alpha level using linear and multiple linear regression analysis.

H0₂: Anxiety does not significantly predict senior secondary school students' acquisition of information and communication technology skills in Gombe State.

The mean score of students' anxiety towards ICT skills acquisition and the mean score of students' acquisition of ICT skills was correlated using a simple linear regression method. The results are contained in Tables 3a and 3b respectively.

Table 3a: Relationship between Students' Anxiety and Acquisition of Information and Communication Technology Skills in Gombe State

Model	r	R Square	Adjusted R Square	Std. Error of the Estimate
1	.052 ^a	.003	.000	15.230

Table 3a reveals that the R-square value of 0.003; this shows that indicates that 00.3% of the variance in senior secondary school students' acquisition of information and communication technology skills in Gombe State can be accounted by the students' anxiety towards ICT skills acquisition. This implies that students' anxiety towards ICT skills acquisition did not predict their acquisition of ICT skills. To represent this result, Table 3b is hereby presented.

Table 3b: Regressed ANOVA of Students' Anxiety and Acquisition of Information and Communication Technology Skills in Gombe State

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	259.580	1	259.580	1.119	.291
	Residual	95801.152	418	231.964		

Total	96060.733	419
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Not Significant; $p > 0.05$.

Table 3b showed that students' anxiety towards ICT skills acquisition did not significantly predict their acquisition of information and communication technology skills secondary schools of Gombe State ($F = 1.119$ (df 1, 418), $p = 0.291 < 0.05$). Since the p-value of 0.291 is greater than 0.05, the null hypothesis two earlier stated is hereby upheld.

This study reveals that senior secondary school students in Gombe State had high levels of anxiety towards ICT skills acquisition. The result implies that students will normally display signs of nervousness and uneasiness when they are exposed to ICT tools. Moreover, the test result of null hypothesis two reveals that anxiety did not significantly predict senior secondary school students' acquisition of information and communication technology skills. By implication, it means that a change in students' anxiety towards ICT skills acquisition may not lead to a change in the students' acquisition of information and communication technology skills. This finding coincides with the works of Husin, Thinakaran and Husin (2018) which reported that the undergraduate students displayed a good level of computer skills with a high level of computer anxiety. Similarly, even though Dangut and Sakiyo (2014) recorded a significant relationship between computer competence and computer anxiety, the relationship was, however, a weak positive one. In order words, their anxiety towards computer did not significantly predict their computer skills. Nevertheless, the finding of this study is not consistent Olufemi and Oluwatayo (2013) who reported that computer anxiety significantly predicts performance in the computer-based test. Dangut and Sakiyo (2014) revealed that students have low competence in basic computer literacy skills and a high level of anxiety towards the computer-Based Test. In a similar view, Ossai (2011) reported that anxiety may have broader consequences, negatively affecting a student's social, emotional and behavioural development, as well as their feelings about themselves and the school. Psychologists asserted that high anxious students do not perform adequately in the skills as their attention is divided between themselves and the information and communication technology facilities. Similarly, the students in this study expressed high levels of fear towards ICT skills acquisition, despite rating themselves high on the acquisition of ICT skills, the data failed to predict. The study recommends that, School Authorities should introduce and integrate some forms of Computer Based Test in schools' assessment systems in order to acquaint highly anxious and emotionally apprehensive students with the use of ICT facilities to reduce techno-phobia when interacting with ICT facilities for them to acquire ICT skills.

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