

HKAECT-AECT 2017 Summer International Research Symposium

Track 8: Education, Communication and Technology

Internet Self – Efficacy, Computer usage and Competency variables influencing university students' internet use in Southern, Nigeria

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Abstract

The need to ensure that no student is left behind in the information age has led universities to adopt Information and Communication Technology devices and its related Internet services in higher education services. Unfortunately, a small amount of studies are available on the variables that have motivated university students to make use of the Internet platforms provided by the universities. This study, therefore, presents the influence of Internet self-efficacy, computer usage, and computer competency variables on university students' Internet use in Nigeria. The study adopted a descriptive survey design guided by research questionnaires to collect computable data from one thousand and two hundred and eighty-two university students using accidental and snowball sampling techniques in four universities in Southern, Nigeria. The data collected was subjected to Multiple Regression Analysis, while results show that the Internet self-efficacy, computer usage, and computer competency variables were robust predictors of

university students' Internet use. The findings in this study were restricted to one thousand and two hundred and eighty-two university students in four universities in Southern, Nigeria. These findings lend credence to educational researchers' opinions that universities should give attention to factors motivating students' Internet use in developing nations.

Keywords: Internet self-efficacy, Computer usage; Computer competency; University students'; Internet use; Nigeria

Introduction

Adu and Ige (2016) note that the current information society is characterized with the use of the internet to transact different social and commercial activities. In a recent article, Kesici and Sahin (2009) affirm that the effective usage of the internet can transform the machine that powered the fourth revolution in education (Ige, 2012) to a platform that will empower students to meet friends, transact business, enjoy entertainment, provide adroitness, and cognize educational necessities. It will interest scholars that the opportunities peculiar to the internet use highlighted by Kesici and Sahin (2009) are the precepts used for social interaction by university students in Nigeria at present. In this study, I investigate the internet self –efficacy, computer usage and competency with the intent to establish or determine their relationships with the use of internet by university students in Nigeria.

Internet Self-Efficacy and Internet Use

The effect of internet self-efficacy on university students have been widely studied (Wang, Chen & Chen, 2015; Hsu, 2010; Boron, 2012). Deryakulu, Mcilroy, Ursavas, and Caliskan (2016) define computer self-efficacy as 'an individual's percipience to use computers in the accomplishment of an assignment'. Consequent on the emerging nature of internet self-efficacy in modern educational research literature, it is fitting to infer from these scholars that internet self-efficacy is a student's perception of his or her ability to deploy the internet to accomplish academic chores, while internet use implies students engagement in online tasks such as gaming, streaming of videos, use of Facebook, 2go, whatsApp and other cross-platform instant messaging applications. Jung, Lin and Kim (2012) state that adolescents have grown up with the internet that they regularly use it as a tool to communicate, search for educational resources, buy goods and services, and to achieve other extra-curricular goals. The survey conducted by Pew Research Center strengthens the assertion of Jung, Lin, and Kim(2012) as 49% of smartphone owners using messaging apps were found with an age range of 18 to 29, an age range peculiar to university students studied in this research (Duggan, 2015).

Zhang (2015) explores the relationship between internet efficacy and bi-lines civic participation drawing on the data gathered by the Pew Research Center's 'Social side of the

Internet' survey conducted among 2,303 respondents in 2010. The findings show that individual internet efficacy has a positive impact on off-internet and on-internet civic participation. It should be noted that offline and online participations involve internet use. Consequent on reports that digital media are now integrated into daily life and used predominantly for education work and leisure (Williams & Zenger, 2012; McLelland, 2017), this study aims to ascertain the relationship between university students' ability to deploy the internet for academic chores in their use of the internet.

Computer usage, Computer competency and Internet use

Schools are saddled with the responsibility of fostering technological literacy among students. Research has shown that there are four inter-correlated variables of internet use; these are internet for work use, use for social activities, leisure and use at home by students (Orchard & Fullwood, 2010; Hills & Argyle, 2003; Landers & Lounsbury, 2006). This study aims to ascertain the relationship between students constant deployment of personal computers, their abilities to utilize personal computers for solving any academic or personal task will have a tie-in with the selected students' use of the internet. The dawn of the digital age have spurred researchers to evaluate how psycho-social traits may influence users' interaction with the internet (Guadagno, Okdie, & Eno, 2008), elderly persons' use of internet (Ramon-Jeronimo, Peral-peral & Arenas-Gaitan, 2013), and much more. Laurie, Bridglall and Arseneault (2015) investigate the effect of computer-administered on the writing achievement of students using the conventional paper and pencil test as control. These scholars discover a significant difference in the orthography criterion of the computer written essays. The results also reveal significant differences in the ideas, punctuation, and syntax criteria of the paper and pencil essays. However, consequent on conflicting result of previous studies evaluating different variables in relation to students' internet use, this study aims to evaluate the influence of internet self-efficacy, computer usage, and competency on students' internet use in Southern, Nigeria. Hence, in this study, answers were sought to these research questions:

1. What is combined influence of internet self-efficacy, computer usage and competency on university students' internet use?
2. What is the relative influence of internet self-efficacy, computer usage and competency on university students' internet use?

Objectives of the study

The major motivation of this enquiry is to evaluate relationship between university students' ability to use a computer and internet use. The specific objectives are to:

- Explore the relationship between internet self-efficacy and university students internet use.
- Examine the relationship between computer usage and internet use among university students.

- Bracket university students' computer competency levels with their internet use.

Methodology

Research Design

This study utilizes the survey design approach of quantitative type because the variables of interest have manifested before investigation. The survey approach was chosen consequent on its use in quondam studies.

Population and Sample

The population of the study consist of one thousand and two hundred and eighty-two university undergraduates in four universities in Southern, Nigeria. These universities were mustered through accidental and snowball sampling techniques. The selected students were from all the levels at the university.

Instruments

A questionnaire was designed and used to gather the data in line with the quantitative approach utilized for the study. The questions raised in this study guided the researcher in designing the questionnaire. The items on the questionnaire were adapted from the works of previous researchers (Narvaez, 2007; Murphy et al, 1989), while other items were constructed by the researcher. Section A of the instrument elicited responses on students' age, sex, and school. Section B had 10 items that elicited response on university students' internet self-efficacy. The scale emanated from Schwarzer and Jerusalem (1995)'s general self-efficacy scale. Some of the items on the scale are: *I can usually manage whatever comes my way using the internet; I can resolve most difficulties if I invest the necessary effort using the internet; I am confident that I could deal efficiently with unexpected events using the internet.* The reliability co-efficient of the university students' internet self-efficacy scale using Cronbach Alpha is 0.82. The scale ranges from 'Not at all true' to 'Exactly true'.

Section C had the 'University Students Computer Usage and Competency Scale'. This section contains two sub-scale with items such as *'I can use a printer to make a 'hardcopy' of my work'; 'I understand the three stages of data processing: input, processing and output'; 'I can work on a personal computer'*. The reliability co-efficient of this sub scale using split-half method is 0.75.

The computer competency sub scale is a ten multiple choice test taken from the 'Computer Literacy and Competency Test' put together by the North American Division of Seventh Day Adventists in 2005 and 2009 respectively. The test has options a – d with only one correct option. The reliability of the 'Computer Competency Test' is 0.78 using KR-20.

Section D has the ‘University’s Students’ Internet Use Questionnaire’. This instrument was adapted from Hilson, Distefano and Daniel (2003)’s ‘Internet Self-perception Scale’. The ‘Personal Self-Evaluation’ component was used to measure university students’ internet use. The sub-scale has items like ‘*when I use the internet, I need less help than I used to*’; ‘*I can figure out how to find information on the internet better than I could before*’; ‘*I like to use the internet*’. The 5- point likert scale ranging from ‘Strongly Agree (5) to Strongly Disagree (1)’ was used. The reliability co-efficient of the questionnaire using cronbach alpha is 0.87.

Data Analysis

The influencing effect of the independent variables (internet self-efficacy, computer usage, computer competency) on the dependent variable was sought using multiple regression at 0.05 level of significance.

Results

Table 1 shows the findings of the multiple regression and ANOVA statistical tools employed to answer research question one. The result of the analysis shows R square of 0.055 and adjusted R square of 0.051, which statistically implies 5.5% contribution of the total variance by the independent variables to the internet use of university students. The ANOVA of the combined influence of the independent variables i.e. internet self-efficacy, computer usage and competency produced F of 14.899 at 0.05 level of significance.

Table 1: Combined Influence of Internet Self – Efficacy, Computer usage and Competency variables on university students’ internet use

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1831.735	5	366.347	14.899	.000
Residual	31375.535	1276	24.589		
Total	33207.270	1281			

a. Predictors: (Constant), Internet Self-Efficacy, Computer usage, Computer competency

b. Dependent Variable: University students’ Internet use

R=.235; R2 = .055; Adjusted R2 = .051; Standard Error of the Estimate = 4.95873

Table 2: Relative Influence of Internet Self – Efficacy, Computer usage and Competency variables on university students’ internet use

Unstandardized Coefficients	Standardized Coefficients
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Model	B	Std. Error	Beta	t	sig
Constant	32.843	1.309		25.091	.000
Internet Self Efficacy	.017	.021	.022	.804	.421
Computer usage	.023	.014	.048	1.664	.096
Computer Competency	.064	.065	.027	.983	.326

Dependent Variable: University students' Internet use

Table 2 reveals the outcomes of the relative contribution of the independent variables to the internet use of the selected university students'.

The standardized Bs and t-test of the independent variables are presented: internet self-efficacy (B= 0.022, t=0.804, $p > 0.05$) had no significant relative influence on university students' use of the internet. This implies that the inability or ability of a university student to utilize the internet have no influence on their use of 'super highway of information' for daily academic chores. Computer usage (B= 0.048, t=1.664, $p > 0.05$) had no significant influence on the use of the internet by university students. This implies that students utilized other ancillary devices like mobile phones, ipads to surf the internet in the absence of a personal computer system. Computer competency (B=0.027, t= 0.983, $p > 0.05$) had no significant influence on university students internet use.

This suggests that university students' ability to use the computer at different operational levels have no relationship with their use of internet for educational purposes.

Discussion

This study has shown that internet self-efficacy, computer usage, and computer competency could have explicit effects on the use of internet by university students in developing countries. The answer to research question one shows that the independent variables investigated in this study when taken together could succinctly unravel the unseen factors at work in the use of internet by university students that can operate personal computers and those that are not so competent to operate personal computers. This shows the dynamics of internet use by students in 21st century universities. The discovery that internet self-efficacy, computer usage and computer positively influenced university students' internet use complemented the findings of Zogheib (2015) that prior computer experience is one of the significant predictors of computer use and by extension the internet. A current external communication shock to the affirmation of Zogheib (2015) is the use of data services on affordable mobile phones manufactured in China by university students in developing countries. The familiarity with internet use provided by network providers at little or no charge is potent to confound the 'prior computer experience' claim by this scholar as one of strong basis for computer and internet use.

The second research question enquires the relative influence of internet self-efficacy, computer usage and competency on the use of internet by university students. To answer this question, the mean values of the independent variables were compared using standardized Bs and t-test using a contingency table. The findings reveal that the independent variables (internet self-efficacy, computer usage, and computer competency) have trifling influence on university students' internet use. This findings negate the affirmation of Million, Doudaki, and Demertzis (2014) that more educated users are usually experienced with the use of the internet as an educational resource, and Sadik (2006) who discovers that teachers' levels of school computer use was determined by their attitudes to computers, especially teachers with long teaching experiences appreciating the importance of computer use in schooling.

Conclusion

The research integrated a rare combination of psychological variables in unveiling university students' internet use. This study has reveal that university students and use of the internet could be determined as a whole by different variables, which suggests that university in developing nations should provide holistic training to students on the use of internet for formal and informal educational purposes. The hereafter of higher education cum initiation provided by universities in developing nations could be shaped or marred by students' unguided internet use. The implication of the findings is that any electronic medium that is capable of providing internet access to the students could be adapted into the teaching-learning process. Like every educational discourse, this study has some limitations. The one thousand and two hundred and eighty-two students are selected from four universities in Southern, Nigeria. The study only investigates students' use of the internet for informal and formal educational purposes, and left out the academic staff use of the internet. Researchers interested in conducting a related study should minimize these limitations to enhance the generalizability of the outcomes of their proposed study. Despite these shortcomings, this study is philosophically relevant to higher education in developing nations.

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