

Demographic Differences in Postgraduate Students' Attitudes and Use of ICT Facilities in Rivers State University of Science and Technology, Port Harcourt

THOMAS, C. GODSTIME

E-mail: chinujinimthomas@gmail.com

Faculty of Tech & Science education

Rivers state University of Science and Technology

Nkpolu, Port harcourt, Rivers State, Nigeria

ENGR. AMAECHI, O. JOSEPH

E-mail: amaechijoseph@yahoo.com

Faculty of Vocational and Technical Education,

Ignatius-Ajuru University of Education Port Harcourt River state, Nigeria

Abstract

The analytic descriptive survey was carried out with the purpose to comparatively analyze the differences in postgraduate students' use and attitudes towards ICT facilities in technical and science education at the River state University of Science and technology, Portharcourt. The population of the study is 158 which comprised all postgraduate students 2014/2015 academic session, in the faculty of technical and science education, River State University of science and Technology Port Harcourt. 100 respondents constitute the sample size, drawn using random sampling techniques. The researchers constructed part one of the questionnaire and adapts a 33-item list of beliefs and characteristics related to information and communication technology (ICT) developed by Havelka (2003). The researchers administered the instrument on one-on-one to each PG students during a lecture and their responses collected immediately. The study utilized 93 duly completed questionnaires for the data analysis. Items whose mean scores is less than 3.0 were regarded as not utilized and disagreed. While items with mean value 3.0 and above were regarded to be utilized and agree. The hypothesis was tested at 0.05 level of significance, null hypotheses is accepted when the stated level of significance is less that computer level of significance, otherwise it is rejected. The study found that postgraduate students' use and attitudes to ICT facilities is not significantly related to demographic factors like gender, subject and type of degree of study.

Key words: *ICT, postgraduate students, demographic factors and attitudes*

Introduction

The world today is usually referred to as digital society; a society in which every human activities is almost computerized for sake of convenience, portability, flexibility and equitability. Information and communications technology (ICT) is the major channel for the connectivity of this digital age. ICT is referred to as, a variety of the technologies that are used in the processing and management of information of all kind (Olakulehin, 2007). It is further described as all form of equipment and tools, both traditional technologies and newer technological innovations as well as the methods and techniques of conducting the information and communication activities (FME, 2010). The use ICT in schools by staff and students have become a necessity as it can be used to improve the quality of teaching and learning in any tertiary institution (Hamilton-Ekeke & Mbachu, 2015). Academic activities in most tertiary institutions in Nigeria are being influenced by the innovations and developments in the ICT, of which the Rivers State University of Science and technology is no exception.

However, while the uses of ICT facilities have received wide spread adoption for teaching and learning, there could exists some teachers and students who may still exhibit contrary attitudes to utilizing the technology in teaching and learning. Yusuf (2006) identified that among other factors that help determine the successful use of ICT, and for the proper integration of ICTs and related technology into the educational system are the students' attitude, skill, and interest to usage. Similarly, Gillwald & Esselaar, (2005) maintained that these are the factors that help determine the successful use of ICT for information retrieval and sharing in education. According to (Fatoki as cited in Ndubuisi & Udo, 2013) attitudes of students towards ICT facilities can enhance or mar their approach to the use of the technology. Hence, in the view of (Ajzen as cited in Abedalaziz, Jamaluddin, & Leng, 2013) attitude is described as the individuals inclination to respond either favorably or unfavorably towards a technology. That is the person's positive or negative judgment about a particular thing. In essence, it implied that there is cognitive, affective and psychomotor components of attitudes. For instance, the cognitive aspects involves "knowledge, beliefs and expectations"; the affective aspects involves "emotional and motivation"; while the psychomotor aspects involves "behavior or actions".

Attitudes towards use of technology has also been defined as a person's general evaluation or feeling towards ICT and specific computer and Internet related activities (Smith, Caputi, & Rawstone, cited in Abedalaziz, Jamaluddin, & Leng, 2013). They further expatiate that technology used by students include the internet, online shopping, e-mail, chat, graphics, programming, spreadsheet and online literature search among others. And the students' demographics have no significant effects on their attitudes and use of computer technology. In the study conducted by Havelka (2003) to comparatively analyse the beliefs and attitudes of students about management information system, found two groups of students to have predominantly positive beliefs about information technology. A similar study by Teo (2008) found pre-service teachers to possess age-unrelated attitudes towards computer usage. It also found subject domain difference in the respondents' perception of the ICT usage. The study by (Ojo & Akande, 2005 as cited by Ndubuisi & Udo, 2013) conclusively decried the low level of electronic information usage by students. In a similar study conducted by Inoue (2007) in Guam University found no significant gender and various academic status group differences amongst 174 students selected from the school of education.

Consequent upon the importance of attitudes towards use of a technology, it is a worthwhile study to investigate the attitudes of postgraduate students towards the use of ICT facilities. Though, most of the research studies reviewed that no significant gender related differences in the use of internet were done mostly in the western countries (Nai Li & Kirkup, 2007). It is therefore imperative that the postgraduate students' beliefs and attitudes towards use of ICT facilities in their various programmes be investigated. Hence, exploring the character aspects of the students would engender new technology implementations in the faculty, and would aid in the effective assessment of postgraduate students technology use. Furthermore, taking cognizance of the demographic factors that set-in differences in the students' beliefs and attitudes would enhancing postgraduate students' use of ICT facilities.

Statement of the problem

Many existing research studies conducted in this area are focusing on attitudes of students towards ICT usage. Research studies investigating on the effect of demographic factors of students that affects their usage of ICT facilities at higher institutions in Nigeria is lacking. Therefore, the problem of this study is what are the differences in postgraduate students' demographics that influence their attitudes towards use of ICT facilities?

Purpose of the study

The purpose of the study was to comparatively analyze the differences in postgraduate students' use and attitudes towards ICT in the faculty of science and technical education, River state University of Science and technology, Port Harcourt. Another important issue that was addressed was if there were significant differences in attitudes amongst postgraduate students according to gender and study related factors.

Research questions

These research questions and hypotheses were raised to guide the study.

1. In what activities do postgraduate students make uses of ICT facilities in the faculty?
2. What are the attitudes of postgraduate students of Faculty of Technical and Science Education, River State University of Science and Technology Port Harcourt towards utilization of ICT facilities?
- 3.

Hypotheses

Ho: there is no significant difference in the response about the attitudes amongst postgraduate students according to gender, subject, and degree of study related factors.

Materials and methods

The design of the study was Analytic descriptive survey. The population of 158, comprising of all postgraduate students 2014/2015 session in Faculty of Technical and Science Education, River State University of Science and Technology Port Harcourt. A sample size of 100 was drawn using random sampling techniques. A questionnaire was constructed, with a 33-item list of beliefs and characteristics related to information and communication technology (ICT) developed by Havelka (2003) was adapted and the validation of the research instrument was done by two experts in the Department of Science and Technical Education of the University. Responses of 30 students who were in the population but not part of the sample were used in determining the reliability index. The correlation yielded 0.89 Alpha reliability indexes, which indicated that the instrument was reliable for the study. The researchers administered the questionnaire on one-on-one the respondents during their pre-lecture session and their response collected immediately. Data collected from the respondents were sorted and 93 duly completed instruments were used for the analysis.

Table 1: Demographic characteristics of postgraduate students in FTSE

Variable	Frequency	Percent (%)
Gender		
Male	51	54.8
Female	42	45.2
Subject		
Technical and science education	36	38.7
Business education	24	25.8
Educational foundation	33	35.5
Degree of study		
Doctorate	4	4.3
Masters	57	61.3
Postgraduate diploma	32	34.4

Data collected was analyzed using statistical package for social sciences (SPSS), mean and standard deviation was used to answer the research questions based on five point Likert scale. MANOVA used to test the Null hypotheses. Items whose mean scores is less than 3.0 were regarded as not utilized and disagreed. While items with mean value 3.0 and above will be regarded as utilized and agree. The hypothesis was tested at 0.05 level of significance, the null hypotheses is accepted if the stated level of significance is less that computer level of significance, otherwise it is rejected.

Results

Research question

1. In what activities do postgraduate students make uses of ICT facilities in the faculty?

Table 2 showing respondents mean on the activities postgraduate students’ uses of ICT

S/N	ITEMS	GENDER			SUBJECT			DEGREE TYPE				
		M1	M2	MG	M3	M4	M5	MS	M6	M7	M8	MD
1	Graphics	2.43	2.71	2.57	2.11	2.92	2.79	2.56	1.75	2.67	2.47	2.30
2	Chatting	3.25	2.88	3.07	3.11	3.50	2.76	3.09	2.00	3.18	3.06	2.75
3	Browsing internet	2.84	3.00	2.92	2.75	3.29	2.82	2.91	1.75	3.09	2.75	2.53
4	Drawing, painting	2.37	2.57	2.47	2.42	2.33	2.61	2.46	2.25	2.47	2.47	2.40
5	E-mail	3.53	3.43	3.48	3.17	4.04	3.42	3.48	3.00	3.51	3.50	3.34
6	Word processing	3.80	3.24	3.52	3.50	3.92	3.33	3.55	4.25	3.61	3.34	3.73
7	Online shopping	2.51	2.88	2.70	2.36	3.13	2.70	2.68	2.00	2.49	3.09	2.53
8	Playing games	2.71	3.26	2.99	2.61	3.58	2.88	2.96	3.00	2.84	3.16	3.00
9	Scanning journals	3.20	3.17	3.19	2.78	3.88	3.12	3.13	2.50	3.07	3.47	3.01
10	Downloading articles	2.86	3.48	3.67	3.56	4.08	3.55	3.69	3.75	3.67	3.72	3.71
11	Watching music and video	2.86	3.38	3.12	2.64	3.75	3.12	3.10	2.75	2.81	3.66	3.07

Keys to Mean responses: M1= Male, M2= Female, M3 = Tech & Science, M4= Business Education, M5= Educational foundation, M6=Phd, M7= Msc, M8= Pgd, MG=Average mean Gender, Ms= Average mean Subject, MD= Average mean degree of study

Table 2 shows disagreement to the use of items 1, 3, 4, and 7, by respondents across gender, subject and degree of study with average mean ranges from 2.30 to 2.92 which is less than the set 3.0 average mean. However, in item 3 there were disparities in respondents’ opinions in all categories such that female (3.00), business (3.29) and Msc (3.09) students agreed to the use of ICT for Internet Surfing. In items 8 respondents disagreed to the use of ICT in playing games by gender (2.99) and subject (2.96) but agreed by degree of study (3.00). However there were discrepancies across the various categories, female (3.26) and business education (3.58) students agreed in their respective groups, while Msc (2.84) disagreed in degree of study group. Item 2, while participants agree by gender and subject, with average mean ranges from 3.06 to 3.09, they disagreed in their degree of study with average mean of 2.75. However, disparities exist in all the categories such that mean responses of female (2.88) educational foundation (2.76) and Msc (3.18) and Pgd (3.06) expressed divergent opinions from their respective group standpoints. The results in items 5, 6, 9, 10 and 11 indicated that respondents agreed in all statements, with average mean ranges from 3.01 to 3.73 which are above the cut-off point of 3.0 mean. There were divergent opinions within two categories in item 9, where technical & science education (2.78) and Phd (2.50) students disagreed. Similarly in item 11, the result showed that respondents agreed, divergences in opinion exist across all the categories such that male (2.86), technical & science (2.64), Phd (2.75) and Msc (2.81) students disagreed in the opinion of their respective categories.

Research question

2. What are the attitudes of postgraduate students of Faculty of Technical and Science Education, River State University of Science and Technology Port Harcourt towards utilization of ICT facilities?
- 3.

Table 3 respondents mean on attitudes towards use of ICT facilities in FSTE

S/N	ITEMS	GENDER			SUBJECT			DEGREE TYPE				
		M1	M2	MG	M3	M4	M5	MS	M6	M7	M8	MD
1	Allows access variety of information	4.61	4.12	4.37	4.39	4.75	4.10	4.39	4.75	4.49	4.16	4.46
2	Causes us to access current information	4.39	4.14	4.27	4.39	4.42	4.03	4.28	4.75	4.42	3.97	4.38
3	Improves communication	4.53	4.21	4.37	4.42	4.50	4.26	4.39	4.25	4.42	4.34	4.34
4	Affects the quality of life	3.61	3.64	3.63	3.79	3.75	3.32	3.62	4.00	3.68	3.47	3.72
5	Allows better jobs	3.69	3.50	3.60	3.68	3.87	3.29	3.60	3.25	3.65	3.56	3.49
6	Gives opportunity to learn other culture	3.82	3.74	3.78	4.08	3.29	3.81	3.78	4.25	3.84	3.63	3.91
7	Increases our learning ability	4.51	4.10	4.31	4.37	4.46	4.16	4.86	4.50	4.40	4.16	4.35
8	Provides more services	4.35	4.07	4.21	4.29	4.21	4.16	4.23	4.50	4.33	4.00	4.28
9	Affects the environment	3.63	3.79	3.71	3.66	3.87	3.61	3.70	3.25	3.81	3.56	3.54
10	Ease of work load	4.53	4.00	4.27	4.50	4.33	4.00	4.29	4.50	4.35	4.16	4.34
11	Helps to advance science	4.43	3.95	4.19	4.29	4.29	4.06	4.22	4.25	4.33	4.00	4.19
12	Makes easy to obtain educational materials	4.67	3.98	4.33	4.47	4.46	4.13	4.35	4.50	4.46	4.16	4.37
13	Self accomplishing	3.86	3.48	3.67	3.74	4.00	3.39	3.69	4.25	3.81	3.41	3.82
14	Improves work efficiency	4.29	3.79	4.04	4.37	4.00	3.74	4.06	4.75	4.11	3.91	4.26
15	ICT is new innovations	4.27	4.12	4.20	4.16	4.25	4.23	4.20	3.75	4.19	4.28	4.08
16	Improves products	4.04	3.88	3.96	4.08	3.83	3.94	3.97	4.25	3.96	3.94	4.05
17	Is effective instructional tool	4.51	4.50	4.51	4.45	4.33	4.71	4.51	4.25	4.53	4.50	4.43
18	Is constantly changing	4.10	4.21	4.16	4.18	4.00	4.23	4.15	4.25	4.04	4.34	4.21
19	It is convenient for use	4.24	4.12	4.18	4.18	4.29	4.10	4.18	4.50	4.11	4.28	4.30
20	It improves livelihood	3.80	4.17	3.99	3.89	4.08	3.97	3.97	3.25	3.84	4.28	3.79
21	Affects the way people behave	3.59	3.88	3.74	3.63	3.63	3.90	3.72	3.50	3.54	4.06	3.70
22	It saves time to use	4.06	4.00	4.03	4.13	3.96	3.97	4.03	4.25	3.96	4.12	4.11
23	It recreational to use	3.59	4.07	3.83	3.95	3.54	3.84	3.81	4.00	3.82	3.75	3.86
24	It is technology dependent	3.84	3.98	3.91	3.84	4.00	3.90	3.90	4.50	3.79	4.03	4.11
25	Helps us make better decisions	3.57	3.55	3.56	3.61	3.75	3.35	3.56	3.50	3.65	3.41	3.52
26	Has a financial impact	4.06	3.62	3.84	3.92	3.92	3.74	3.86	4.00	3.91	3.75	3.89
27	Ties us to machines	3.65	3.67	3.66	3.76	3.58	3.58	3.64	3.75	3.75	3.47	3.66
28	Saves lives, i.e. medical uses	3.33	3.43	3.38	3.11	3.50	3.61	3.38	2.75	3.33	3.53	3.20
29	It s addictive	3.75	4.02	3.89	4.08	3.50	3.90	3.87	3.50	3.96	3.75	3.74
30	It encroaches on individual privacy	3.65	3.79	3.72	3.97	3.33	3.68	3.71	3.50	3.63	3.87	3.67
31	It does not allow critical thinking	3.67	3.57	3.62	4.18	2.79	3.58	3.62	4.00	3.67	3.50	3.72
32	Helps us live longer	2.53	3.21	2.87	2.63	2.54	3.32	2.84	2.50	2.70	3.13	2.78
33	It posses fear to new users	2.78	3.05	2.91	2.68	2.96	3.13	2.90	2.75	2.79	3.13	2.89

Table 3 shows that respondents agreed in gender, subject and degree of study categories to all the statements in items 1 to 31, with average mean ranges from 3.20 to 4.86 which, higher than cut-off point of 3.0. They disagreed in item 32 & 33 with average mean ranges from 2.78 to 2.91 which is lower than the cut-off point. However, there were divergent opinions in responses of female (3.05, 3.21), educational foundation (3.13, 3.32) and Pgd (3.13), students in both items is higher than the cut-off point of 3.0 mean.

Hypothesis: There is no significant difference in the attitudes of three groups of postgraduate students according to gender, subject and degree of study related factors.

Table 4 MANOVA of gender, subject and degree type of postgraduate students' attitudes to ICT in FTSE

Dependent variable	Type III sum of squares	Df	Mean square	F	Significance
Gender	.367	1	.367	.979	.325
Subject	.938	2	.469	1.250	.292
Degree	.252	2	.126	.336	.716
Gender x Subject	.138	2	.069	.184	.832
Gender x Degree	.367	1	.367	.979	.325
Subject x Degree	1.398	2	.699	1.863	.162
Gender x Subject x Degree	.472	2	.236	.628	.536
Error	29.649	79	.375		
Total	1460.127	93			

The result in table 4 above indicate no significant difference exists in the attitudes among postgraduate students according to their gender, subject and degree of study related factors. Because the stated 0.05 level of significance is less than the computer level of significance across the entire variable compared.

Discussion of findings

The result shows that 54.8% of the respondents are male while 45.2% were female students; 38.7% are in science & technical education department, 25.8% are in business education department, while 35.5% are in educational foundation department, it also showed that 4.3% Phd, 61.3% Master and 34.4% are PGD students, all in the faculty.

The result of the study indicated that, the postgraduate students disagree to the use of some ICT facilities across gender, subject and degree of study. However the disparities in respondents' opinions in almost all categories, the students still unanimously agreed to the use of ICT for Internet Surfing. This agrees with the study conducted by Ojo & Akande as cited by Ndubuisi & Udo (2013) who drew a conclusion from their findings that the level of usage of the electronic information resources among students is very low.

The result showed no significance demographic differences across all variables compared. The findings of this study is similar to that of Teo (2008) who in their different studies reported no gender significant differences, but found out that male students hold more positive computer attitudes than their female counterparts.

Conclusion

Based on the result of the study it could be inferred that Postgraduate students' use and attitudes towards ICT facilities is not significantly related to demographic factors such as gender, subject and type of degree of study.

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