
Analysis of Students' Attitude Towards the Use of Information and Communication Technology
in Nigerian Tertiary Institutions

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ABSTRACT

This paper is on Students' attitude towards Information and Communication Technology (ICT) in Nigerian Tertiary Institutions. 180 science students from three colleges of education, 240 science and engineering students from three polytechnics and 160 science and engineering students from two universities constituted the sample. A 20 items attitudinal questionnaire on Information and Communication Technology (AQICT) was developed and administered to respondents. Data obtained were subjected to mean, t-test and ANOVA statistical analysis. Findings showed that students exhibited negative attitude towards some ICT. The study also revealed that student's gender difference had no influence on their attitude towards ICT while school nature influence student's attitude towards ICT. It was suggested that, computer literacy courses be introduced to all science and engineering students in Nigerian tertiary institutions if the nation need to forge ahead technologically.

INTRODUCTION

The classification of any nation into developed, developing and underdeveloped depends on the number of scientist, technologies and information technology available in that country. Ogunniyi (1986) defined science as a body of knowledge which has been acquired through experimentation. Furthermore, according to Abimbola (2006) Science could therefore be defined as a body of knowledge, a way of investigating, and a way of thinking in the pursuit of understanding of nature. It is difficult, if not impossible, to separate the achievements of science from those of technology. A scientific understanding of the natural world is the basis for much of technological development today. The design of computer chips, for

instance, depends on a detailed understanding of the electrical properties of silicon and other materials.

Information is a general term for news, reports, intelligence or anything which can be communicated from one individual to another. Information is never valuable unless it is communicated in the right way to the user (Thomas and Ballard, 1995 Oveyinka, 2001). Information involves knowledge acquired in any manner, ideas and facts that have been communicated or any data that can be stored and retrieved in machine readable form (Weiner, 1990).

Technology as defined by Dymong (2002) is a social process that generates and combines know now and people in order to extend the physical range of men. Technology

according to KGRG – 55A3ER (2005) is the process by which humans modify nature to meet their needs and wants. Most people, however think of technology in terms of its artifacts; computers and software, aircraft, pesticides, water-treatment plants, birth control pills and microwave events; to name a few; but technology is more than those tangible products. Technology is a product of engineering and science. Technology includes all of the infrastructure necessary for the design, manufacture, operation and repair of technological artifacts. Rahman (2004) classified technology into: telecommunications, satellite technologies, electrical and electronics (hardware) and electronic computer (software).

Communication is defined by Jwakdah, Bolt, Gyang & Yero (2003) is the means of conveying information of any kind from person or place to another, except by direct unassisted conversation or correspondent through postal agencies. Communication according to Dangpe (2000) is a process of information exchange between two or more individuals or organization. Thus, communication is a two-way process which involves the impacting of information to people. Salawu & Taiwo (2001) defined communication as the process of sending out information, ideas, concepts and message from sender to a receiver. Babajide and Bolaji (2003) remarked that there are different types of communication media, some of which are as follows: computers hard and softwares, public address system, slide overhead and opaque projectors, video, VCD, audio tapes and cassette recorder, TV, radio, flanned boards cartoons and comics, charts, Dirorna still motion pictures, internet, satellite, electronic mail, world wide web and so on.

Attitude as defined by Mukherjee (1978) refers to one's feelings, thought and predisposition to behave in some particular manner towards some aspect of one's environment. Emina (1984) remarked that, it would be a serious omission lion in the process of socializing children, if the formation of attitude preferred attitude and the evaluation of attitude are not deliberately planned for and included in the school curriculum. Information and Communication Technology (ICT) as defined by Ojaji (2003) is the handling and processing of information (texts, images, graphs, instructions and so on for use, by means of electronic and communication devices such as computers, cameras, telephones etc. According to Gnsen (1995), ICT is concerned with processing, storing, retrieving and communicating data to user. The above definitions, ICT could be defined as handling and processing of information using all kinds of electronic/mechanical devices.

Purpose of the Study

The main purpose of this study is to determine students attitude towards ICT in Nigerian tertiary institutions. Specifically, the study sought to find out:

1. Whether students from tertiary institutions exhibited positive or negative attitude towards the use of ICT.
2. The influence of students' gender difference on their attitude towards ICT in Colleges of Education, Polytechnics and Universities.
3. The influence of school nature on students' attitude towards ICT.

Research Questions

The following research questions were raised to guide the study:

1. What is the students' attitude towards utilization of ICT in Nigerian Colleges of Education, Polytechnics and Universities?
2. Will students' gender difference influence their attitude towards utilization of ICT in Nigerian Colleges of Education, Polytechnic and Universities?
3. Will students' institution influence their attitude towards utilization of ICT?

Research Hypothesis

The following research hypothesis were formulated and tested in this study:

Ho₁: Students' attitude has no significant influence on their utilization of ICT in Nigerian Tertiary Institutions.

Ho₂: Students' gender differences have no significant influence on their attitude towards ICT

Ho₃: Students' institutions have no significant influence on their attitude towards ICT in Nigerian Tertiary Institutions.

METHODOLOGY

The target population for this study is the entire science students in all colleges of education, science and engineering students from polytechnics and universities. Conscious of the futility in an attempt to sample all; science and technical students in Nigerian tertiary institutions; 180 science students from three colleges of education were used. These respondents were randomly selected from physics, chemistry, biology, Mathematics, Computer science, Integrated science and Physical and Health education departments in the chosen schools. Also, 240 science and engineering students randomly selected from three polytechnics were used.

160 science and engineering students from two universities were also used. In all, a total number of 580 students randomly selected from colleges of Education, polytechnics and universities were involved in the study.

The selected colleges of education are: colleges of education Oro, Ilesa and Federal College of Education, Konene. Federal Polytechnics Offa, Kwara State Polytechnic Ilorin and Osun State Polytechnic Iree. The selected universities are: Al-hikmah University and Ekiti State University. The instrument used in the study was a 20-items Attitudinal Questionnaire on Information and Communication Technology for Students (AQICT). The first part of the instrument sought biodata information such as: Name of institution; students matriculation number, sex, course of study and level. The second part consist of 20 statements on students' attitude towards utilization of ICT. The AQICT was an adaptation of 3-point likert scale. Respondents were required to tick the appropriate responses: Agree (A), Undecided (U), and Disagree (D).

The instrument was validated by two experienced lecturers from Educational Technology Department of Ekiti State University. The item was trial tested by administering it to 20 science students from College of Education, Ilorin. The item was re-administered after three weeks interval then subjected to Pearson product correlation statistics. A correlation coefficient of 0.76 was obtained which was considered adequate for this study.

In determining whether the research hypotheses formulated will be accepted or rejected, the responses: agree, undecided and disagree in the Attitudinal Questionnaire for students were assigned 3, 2 and 1 points respectively. To determine whether student

exhibited positive or negative attitude towards ICT; mean scores were computed as follows:

- I. Mean less than 1.50 ($0 < x < 1.49$): Negative attitude
- II. Mean between 1.5 and 3.0 ($1.5 < x < 3.0$): Positive attitude

In determining whether sex of the students influence their attitude towards ICT, the data was subjected to t-test statistics. To determine the influence of school nature on students' attitude towards ICT, the data obtained was subjected to t-test statistics, while the test of influence based on type of institutions was done using ANOVA.

RESULTS

Table 1: Mean score of students' attitude towards ICT in Nigerian Tertiary Institution

MEDIA	A	U	D	\bar{x}	P
Radio	400	120	60	2.75	S
Television	350	190	40	2.38	S
Telephone/GSM	120	187	283	1.62	S
Computer	53	160	373	1.21	NS
Internet	61	190	320	1.32	NS
e-mail	52	135	393	1.02	NS
Video/VCD machine	380	180	120	2.62	S
Overhead projector	390	131	410	0.45	NS
Fax machine	46	174	360	0.96	NS
Electronic games	70	140	370	1.46	NS

Table 1 shows that students exhibited negative attitude towards ICT. The table revealed that the utilization of computer, internet, e-mail, overhead projector, fax machine and electronic games is below

expectation. The table shows that 'Radio' has the highest mean score of 2.75 while overhead projector recorded the least mean score of 0.45.

Table 2: t-test showing influence of students' gender difference on attitude towards ICT in Nigerian Colleges of Education

Variable	N	\bar{x}	s.d	\bar{x}_2	d.f	t-cal	t.tab	P
Male	70	1.80	2.43	5.70				
Female	110	1.65	1.96	3.84	178	1.42	1.96	NS

Table 2 shows the influence of students' sex on attitude towards ICT in selected colleges of education. The value of t-calculated (1.42) is lesser than t-table (1.96) at 0.05 level of significance. The null hypothesis

on students' gender difference is hereby accepted. The findings show that students' attitude toward ICT in Nigerian Colleges of education have no relationship with gender difference.

Table 3: t-test showing influence of students’ gender difference on their attitude towards ICT in Nigerian Polytechnics

Variable	N	\bar{x}	s.d	t_{crit}	d.f	t-cal	t.tab	P
Male	140	1.75	0.96	0.92				
Female	100	2.01	1.32	1.74	238	1.67	1.96	NS

Table 3 revealed that the value of the t-table (1.96) is greater than t-calculated (1.67) at 0.05 level of significance. The null hypothesis on gender difference is accepted

hence gender difference in Nigerian Polytechnics have no influence on their attitude towards ICT.

Table 4: t-test showing influence of student’s gender difference on their attitude towards ICT in Nigerian Universities

Variable	N	\bar{x}	s.d	t_{crit}	d.f	t-cal	t.tab	P
Male	70	2.26	1.35	1.8				
Female	90	1.89	1.88	3.53	158	1.75	1.96	NS

Table 4 revealed that the value of t-calculated (1.75) is lower than t-critical (1.96) at 0.05 level of significance. The null hypothesis on students’ gender difference was

accepted. The outcome of this study showed that gender difference of university students has no influence on their attitude towards ICT.

Table 5: ANOVA showing students’ attitude towards ICT in Nigerian Tertiary Institution.

Variable	N	\bar{x}	d.f	Ss	MS	f-cal	P
COED	180	1.72					
Polytechnics	240	1.86		56.3	28.15		S
University	160	2.06	2			5.03	
Error			577	3229	5.80		
Total	580		579	3285.3	33.75		

Table 5 revealed that the f-calculated (5.03) is greater than f-critical (3.95) at 0.05 level of significance. The null hypothesis on types of institution is rejected. The findings of this study showed that students’ attitude towards ICT varies from school to school.

of Jimoh (2005) who found that lecturers from colleges of education, polytechnics and universities have 50%, 58.33% and 75% utilization of ICT respectively.

DISCUSSIONS

The findings of this study as evidence in table 1 showed that students’ attitude towards utilization of ICT is low. It is pertinent to note that majority of the sampled students were not computer literate. The outcome of this study is not in line with that

Table 2, 3 and 4 showed that students gender difference has no effect on their attitude towards ICT. The outcome of this study is in agreement with those of Omotayo (2002) and Ayodele (2001) who was of the opinion that gender difference have no influence on students’ attitude towards sciences.

Table five clearly showed that the mean score recorded by students from universities was higher than that of polytechnics and colleges of education. The outcome of this study was not surprising because lecturers from universities usually give tasky assignment to students which often force than to make use of computer and internet services.

CONCLUSION

From the findings and discussions of this study it could therefore be concluded that majority of the students in tertiary institutions exhibited negative/attitude towards utilization of ICT. Student's gender difference has no influence on their attitude towards ICT while school nature influence students' attitude towards ICT.

RECOMMENDATIONS

Based on the findings, it is recommended that

1. lecturers in higher institutions should encourage students to utilize ICT by giving them brainstorming assignment.
2. Computer literary courses should be introduced to all science students in tertiary institution while government, parents and philanthropist, organization should assist educational administrators by donating ICT especially computers and internet to our tertiary institutions.

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