Lecturers' and Students' Attitude Towards ICT and its Use in ATBU Bauchi, Nigeria: A Comparative Analysis

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ABSTRACT

This study investigated the attitude of lecturers and students towards ICT and their attitude toward the use of ICT in teaching and learning. A survey design was adopted. A total of 349 lecturers (311males and 38 females) and 1128 students (750 males and 378 females) participated in the study. Two questionnaires were used for data collection. The reliabilities of the questionnaires were 0.92 and 0.83 for lecturers and students respectively. Descriptive statistics, t-test, Pearson Product Moment Correlation and One Way Analysis of Variance were used for data analysis. It was found that lecturers and students of ATBU Bauchi, Nigeria both have positive attitudes toward ICT and toward the use of ICT in teaching and learning. Also, a significant difference was found in the attitudes of male and female lecturers toward ICT as well as between the attitude of male and female students toward ICT. The male tend to be more positive in their attitudes. In terms of age, a significant difference was found in the attitudes of both the lecturers and students toward ICT. The younger lecturers and students tend to be more positive toward ICT than the older lecturers and students. Furthermore, it was found that a significant relationship existed between the attitudes of lecturers toward ICT and their attitudes toward the use of ICT in teaching, and between the attitudes of students toward ICT and their attitudes toward the use of ICT in learning. However, no significant difference was found between the attitude of the lecturers and students toward ICT. The study recommends that since positive attitude toward ICT usually foretell future ICT use, policy makers can make use of the lecturers' and students' positive attitudes toward ICT in this current study for proper integration of ICT in their teaching and learning practices. To sustain the positive attitude of lecturers, training of lecturers on how to use ICT for instructional purposes will play a motivational role, which invariably will lead to more effective utilization in instructional delivery. To also sustain the positive attitude of students, the university should provide more ICT facilities and introduce "the 4 students per computer policy" as authorized by NUC to encourage the students to become more effective in utilizing ICT in their learning.

Keyword. Students' attitude, Lecturers' attitude, ICT, Teaching, Learning

1. Introduction

Information and Communication Technology has turned the world into a global village. Development in this global era is now measured by the advancement in ICT (Offor, 2013). People, with the aid of ICT are able to interact and send messages across the continent without distance and time constraints. Information is freely sort and received

within the shortest possible time. Access to libraries of renowned repute where tangible, current and reliable research information is published, through the aid of virtual libraries is made possible by ICT.

Various ICT modes such as print medium, radio, telephone, mobile, television, overhead and LCD projector, computer, internet, web services, web portals, Facebook as classroom tools, modules, multimedia, space technology, software, on-line journals, on-line learning, CCTV, e-learning, e-books, interactive white board, tele-conferencing and other computer assisted technologies play a very important role in education throughout the world. Theoretical and empirical studies have found the importance of ICT in the process of teaching and learning (Al-Zaidiyeen, Mei & Fook, 2010; Murithi & Indoshi, 2011). In many developed countries, many higher educational institutes are equipped with the infrastructure to assist ICT-mediated teaching and learning (Abedalaziz, Jamaluddin & Leng, 2013). In many educational institutions, technology has been seen as one of the key drivers for the improvement of teaching and learning. The use of ICT is found to be an excellent resource in facilitating teaching and learning for both teachers and students in the classroom (Yang & Kwok, 2017).

2. Literature Review

Achieving meaningful use of ICT in the field of education can be influenced by many factors. Among these factors, users' attitude towards the use of technology could also influence teaching and learning in the classroom (Abedalaziz *et al*., 2013; Pelgrum, 2001). The word attitude implies the sum total of an individual's positive and negative predisposition or mental state of preparation for action in response to a social object (Kpolovie, Joe & Okoto, 2014). Attitudes are determined by the analysis of the information regarding the result of an action and by the positive or negative evaluation of these results (Fishbein & Ajzen, 1981). There is a common saying that attitude determines altitude. In other words, the level of a person's achievement or failure is a function of his/her attitude. Attitude represents the conceptual value of these technologies in the minds of the users, not the values of the technologies themselves. Study has found that, positive attitudes are fundamental in implementing new technologies (Spacey, 2003).

Teachers' attitude is a critical influence on students' confidence and attitude towards ICT as they provide important role model to their students (Derbyshire, 2003).

Kadel (2005) also argued that simply having ICT in schools will not guarantee their effective use; regardless of the quantity and quality of technology placed in classrooms, the key to how those tools are used in teaching is the teacher; therefore, teachers at all levels of education must have the competence and the right attitude towards technology. This was supported by Yushau (2006) who found that mathematics Professors at King Fahd University of Petroleum & Minerals not only have positive attitude towards computers, but also are convinced of the positive role that computers can play in the teaching and learning of mathematics. Researches have also shown that the success of technology use in teaching mostly depends on teachers' attitude towards technology use (Albirini, 2006; Kluever, Lam, Hoffman, Green & Swearingen, 1994) and it is considered as an important element in predicting the use of technologies in educational settings (Albirini, 2006). The development of teachers' positive attitude towards ICT is a key factor in the avoidance of their resistance to ICT use (Watson, 1998). Moreover, Woodrow (1992) maintained that any successful transformation in educational practice requires the development of positive attitude towards new technology. Therefore, it can be concluded that the frequency and effectiveness of ICT usage in the classroom is largely related to teachers' attitude (Shaukenova, 2016).

Students' attitude also influences their use of ICT (Volk, Yip, & Lo, 2003). Students' attitude determines their ability and willingness to learn. Changing students' negative attitude towards ICT is a process that involves determining the factors driving the attitude and using this information to bring about change (Ministry of Education Guyana, 2016). Technology impacts students' daily lives and certainly plays an important part in developing students' positive and negative attitude towards it (Volk *et al*, 2003). In a research by El-Gamal & El- Aziz (2011) it was found that university students in developing countries have varying attitude towards e-Learning but generally their attitude are positive. This was emphasised by Nassoura (2012) who pointed out that many students had positive attitude towards e-Learning because it had a positive impact on their motivation as well as self-esteem. A positive attitude towards learning is paramount in ensuring that students acquire knowledge and skills that will be used in solving real life problems**.**

From the above, it is glaring that both teachers' and students' attitude towards ICT play an important role in their use of ICT in teaching and learning process. Internationally, studies have established close links and affinities between students' and teachers' attitude and their use of ICT in teaching and learning (Li, Chu, Ki & Woo, 2010; Balta & Duran,

2015; Tuan, Hau & Minh, 2015; Livingstone 2015; ELDaou, 2016). Although many studies on the use of ICT in teaching and learning have been carried out, not much is known about the attitude of lecturers and students towards ICT in Nigeria (Shehu, 2012). Most of the studies conducted in Nigeria are on ICT adoption (Kpolovie & Awusaku, 2016) and ICT availability (Tella, 2011; Eze & Aja, 2014). It is in view of this that this study is aimed at investigating the attitude of lecturers and students towards ICT, and its use in Abubakar Tafawa Balewa University (ATBU) Bauchi, Nigeria, as well as to compare the attitude of both the lecturers and students towards ICT. A better understanding of their attitude will allow for more informed decisions about the use of educational technologies in today's higher education institutions. ATBU Bauchi as one of the technology-based university has a great role to play in terms of educating her students. Therefore, the quality of students' outcomes is very important and is influenced by the effectiveness of their lecturers' and students' use of technology in teaching and learning. As a result, this requires that the lecturers and students have a right attitude towards ICT; as ICT is seen as a powerful tool to support innovative methods of teaching and learning, thus contributing to improving the efficiency and quality of education.

3. Statement of the Problem

The impact of ICT is gradually increasing in our daily life. This fact about ICT influences the change of attitude towards its use in the educational setting. Many studies have revealed that most teachers and students have positive attitude towards ICT and enjoy the use of ICT facilities in the teaching and learning process. For instance, Usun (2009) argues that students and academic staff's attitude towards ICT can be a significant factor in the use of ICT in the classroom. While a number of studies on this topic have been conducted in higher institution in developed and some developing countries, to the best of the researchers' knowledge, there are no reported studies on this topic in ATBU Bauchi. Based on the reason above, it was deemed important to investigate lecturers' and students' attitude towards ICT as well as to compare the attitude of both the lecturers and students towards ICT.

4. Purpose of the Study

The purpose of the study was to investigate the attitude of ATBU lecturers and students towards ICT as well as compare the attitude of both the lecturers and students towards ICT usage in general.

5. Objectives of the Study

The objectives of this study were to investigate:

1. The attitude of ATBU lecturers towards ICT
2. The attitude of ATBU students towards ICT
3. The difference between the attitude of ATBU lecturers and students towards ICT
4. The difference between the attitude of ATBU male and female lecturers towards ICT
5. The difference between the attitude of ATBU male and female students towards ICT
6. Whether the age of ATBU lecturers is a determining factor in terms of their attitude towards ICT
7. Whether the age of ATBU students is a determining factor in terms of their attitude towards ICT

6. Research Questions

The following research questions guided the study:

1. What is the attitude of ATBU lecturers towards ICT?
2. What is the attitude of ATBU students towards ICT?
3. What is the difference between the attitude of ATBU lecturers and students towards ICT?
4. What is the difference between the attitude of ATBU male and female lecturers towards ICT?
5. What is the difference between the attitude of ATBU male and female students towards ICT?

6. Is the age of ATBU lecturers a determining factor in terms of their attitude towards ICT?
7. Is the age of ATBU students a determining factor in terms of their attitude towards ICT?

7. Null Hypotheses

The null hypotheses formulated were tested at 0.05 level of significance with the help of Statistical Package for Social Science (SPSS version 22). Hypotheses 1,2, and 3 were be tested using t test, hypotheses 4 and 5 were tested using Analysis of Variance (ANOVA) while hypotheses 6 and 7 were tested using Pearson Product Moment Correlation Coefficient (PPMC).

H_{o1} : There is no significant difference between the attitude of ATBU lecturers and students towards ICT.

H_{o2} : There is no significant difference between the attitude of ATBU male and female lecturers towards ICT.

H_{o3} : There is no significant difference between the attitude of ATBU male and female students towards ICT.

H_{o4} : The age of ATBU lecturers is not a determining factor in terms of their attitude towards ICT.

H_{o5} : The age of ATBU students is not a determining factor in terms of their attitude towards ICT.

8. Methodology

The research was conducted with 349 lecturers (311males and 38 females) and 1128 students (750 males and 378 females) of ATBU Bauchi. The age ranges and gender distribution of the lecturers and students is summarised in the following tables:

Table 1: Lecturers' Response Rate

Category	Group	Number of participants	(%)
Gender	Male	311	89.11

	Female	38	10.89
	Total	**349**	**100.00**
Age Group	25 and below	28	8.02
	26-30	108	30.95
	31-40	104	29.80
	41-50	86	24.64
	51 and above	23	6.59
	Total	**349**	**100.00**

Table 2: Students' Response Rate

Category	Group	Number of participants	(%)
Age Group	25 and below	765	67.82
	26-30	286	25.35
	31and above	77	6.83
	Total	**1,128**	**100.00**
Gender	Male	750	66.00
	Female	378	44.00
	Total	**1,128**	**100.00**

Two separate questionnaires tagged Lecturers' Attitude Towards ICT Questionnaire (LATIQ) and Students' Attitude Towards ICT Questionnaire (SATIQ) were used for data collection. The items in the questionnaires employed in this study were adapted from the Teacher Attitude towards ICT Scale developed by Albirini (2006) and from those developed by Wakhaya (2010). The instruments were modified based on the present research objectives. Each questionnaire is divided into three sections; A, B and C. On LATIQ, section A sought for information regarding demographical data relating to the lecturers' (gender, age group, Faculty). Section B comprised 18 closed ended items, which sought for information on the attitude of lecturers towards ICT. Section C comprised 19 closed ended items that sought for information on the attitude of lecturers towards the use

of ICT in teaching. Similarly, on section A of SATIQ, information regarding the students' demography (gender, age group, faculty) was sought for. Section B contains 18 closed ended items, which sought for information on students' attitude towards ICT while section C sought for information on attitude of students towards the use of ICT in learning.

A 5 point Likert scale was used in designing the questionnaire. The statements on the Likert scale were scored as follows: 'Strongly Agree'=5 points, 'Agree'=4 points, Neutral=3 points, 'Disagree'=2 points, 'Strongly Disagree'=1 point. Negative items had their scores reversed. A mean score of above 3 was interpreted as a positive attitude, a mean score of 3 as a neutral attitude and a mean score of below 3 as a negative attitude.

The questionnaires were validated by three experts from different fields; one from computer science, one from Information Technology and the other from Measurement and Evaluation in ATBU Bauchi. Participants in the study were given the questionnaires to fill and returned them back immediately. After collection, the data was analysed using the statistical package SPSS. The level of statistical significance (alpha level) was set at .05.

9. Results

The results of this study are summarized below followed by some discussions:

Research question 1: What is the attitude of ATBU lecturers towards ICT?

Table 3:Mean Distribution and Standard Deviation of attitude of ATBU lecturers towards ICT

S/NO	STATEMENT	Mean	S.D
1.	The use of ICT makes me much more productive	4.51	0.77
2.	Using ICT makes me enthusiastic	4.06	0.90
3.	Working with ICT is fun	4.21	0.93
4.	I like the idea of using ICT	4.36	0.85
5.	ICT saves time and effort	4.35	0.77
6.	Using ICT is enjoyable	4.17	0.89
7.	I would work harder if I could use ICT	4.08	0.88
8.	ICT skill is worthwhile	4.17	0.85
9.	ICT is useful in dissemination of Information	4.23	0.90
10.	Use of ICT may in the long run replace the teacher in the classroom	3.77	1.12
11.	I won't have anything to do with ICT	3.92	1.10
12.	The state of facilities discourages me from using ICT	3.10	1.27
13.	I have phobia for ICT equipment	3.77	1.17
14.	ICT makes me feel uncomfortable	4.04	1.07
15.	I do not like talking to others about ICT	4.10	1.04
16.	I feel ICT makes me lazy	3.77	1.26
17.	ICT can not address the needs of school system	3.91	1.15
18.	I would rather do things by hand than with ICT	4.11	1.04
Overall lecturers' attitude towards ICT		**4.04**	**0.48**

Decision rule: mean >3 = positive attitude, mean = 3 = Neutral, Mean < 3 = negative attitude

Table 3 showed the result of the attitude of lecturers towards ICT. There is every indication that responses to the positively keyed statements (items 1-10) showed that lecturers have a positive attitude towards ICT. It is seen that the mean rating of all the positively keyed statements are above average (from 3.77 to 4.51). Similarly, on the negatively keyed statements (11 – 18), the results showed that most of the lecturers had positive attitude towards ICT by disagreeing with all of the statements. From the table above, it can be seen that the mean ratings of the statements were above average ranging from 3.06 to 4.20 (scores were reversed). Overall, lecturers' attitude towards ICT was positive (M=4.04, SD=0.48).

Research question 2: What is the attitude of ATBU students towards ICT?

Table 4: Mean Distribution and Standard Deviation of Attitude of ATBU students towards ICT

S/NO	STATEMENT	Mean	S.D
1.	The use of ICT makes me Much more productive	4.49	0.66
2.	Using ICT makes me enthusiastic	4.19	0.78
3.	Working with ICT is fun	4.30	0.77
4.	I like the idea of using ICT	4.41	0.67
5.	ICT saves time and effort	4.49	0.72
6.	Using ICT is enjoyable	4.29	0.72
7.	I would work harder if I could use ICT	4.12	0.83
8.	ICT skill is worthwhile	4.17	0.85
9.	ICT is useful in dissemination of Information	4.17	0.93
10.	Use of ICT may in the long run replace the teacher in the classroom	3.78	1.11
11.	I won't have anything to do with ICT	3.59	1.30
12.	The state of facilities discourages me from using ICT	3.06	1.28
13.	I have phobia for ICT equipment	3.50	1.23
14.	ICT makes me feel uncomfortable	3.90	1.22
15.	I do not like talking to others about ICT	4.00	1.14
16.	I feel ICT makes me lazy	3.66	1.39
17.	ICT can not address the needs of school system	3.88	1.15
18.	I would rather do things by hand than with ICT	4.20	1.04
Overall students' attitude towards ICT		**4.01**	**0.99**

Decision rule: mean >3 = positive attitude, mean = 3 = Neutral, Mean < 3 = negative attitude

Based on the results presented in the table 4 above, there is every indication that responses to the positively keyed statements (items 1-10) showed that students have a positive attitude towards ICT. It is seen that the mean rating of all the positively keyed statements were above average (from 4.12 to 4.49). On the negatively keyed statements (11 – 18), the results showed that most of the students had positive attitude towards ICT by disagreeing with all of the statements. From the table above, it can be seen that the mean ratings of the statements were above average ranging from 3.06 to 4.20 (scores are reversed). Overall, students' attitude towards ICT was positive (M=4.01, SD=0.99).

Research question 3: What is the attitude of ATBU lecturers towards the use of ICT in teaching?

Table 5: Mean Distribution and Standard Deviation of Attitude of ATBU lecturers towards ICT in teaching

S/NO	STATEMENTS	Mean	S.D.
1.	I feel comfortable with the idea of using ICT for teaching	4.26	0.91
2.	The use of ICT makes teaching too easy for me.	4.20	0.83
3.	I feel ICT can enhance my teaching	4.29	0.78
4.	ICT makes teaching more Interesting	4.31	0.74
5.	I look forward to lessons that require me to use ICT.	4.16	0.85
6.	ICT provides better teaching experiences.	4.09	0.89
7.	I teach more with ICT than I do with books.	3.88	0.96
8.	Using ICT in teaching would make subject matter more interesting.	4.08	0.97
9.	ICT gives me opportunity to teach more.	4.11	0.83
10.	Using ICT encourages me to explore situations	4.03	0.95
11.	Teaching with ICT offers real advantages	4.18	0.85
12.	I think that technology supported teaching makes learning more effective.	4.27	0.77
13.	The idea of using ICT in teaching excites me	4.10	0.85
14.	ICT can help me to acquire Understanding and insight in teaching.	4.10	0.82
15.	Working with ICT promotes my systematic approaches.	3.89	1.00
16.	The use of ICT to teach scares me	3.68	1.31
17.	The use of ICT in teaching is time Consuming	3.65	1.28
18.	The idea of using ICT in teaching makes me Sceptical	3.47	1.21
19.	Use of ICT in teaching may slow down syllabus coverage	3.77	1.29
	Overall lecturers' attitude towards ICT in teaching	**4.03**	**0.48**

Decision rule: mean >3 = positive attitude, mean = 3 = Neutral, Mean < 3 = negative attitude

Table 5 revealed the result of the attitude ATBU Bauchi lecturers have towards using ICT teaching. It can be seen from the mean ratings of the positively keyed statements (1-15) that lecturers have positive attitude towards the use of ICT in teaching. The table also indicates that the lecturers regard the technology assisted learning more advantageous to the traditional way of learning. On the negatively keyed statements (15-19), the results also showed that the lecturers were positive towards the use of ICT in teaching by disagreeing with all of the statements. This is evident from their mean ratings ranging from 3.48-3.70 showing that the means were above average. Overall lecturers' attitude towards ICT in teaching was positive (Mean=4.03 S.D=0.48)

Research question 4: What is the attitude ATBU of students towards the use of ICT in learning?

Table 6: Mean Distribution and Standard Deviation of Attitude of ATBU students towards ICT in learning.

S/NO	STATEMENTS	Mean	S.D.
1.	I feel comfortable with the idea of using ICT for learning	4.42	0.76
2.	The use of ICT makes learning too easy for me.	4.32	0.77
3.	I feel ICT can enhance my learning	4.37	0.71
4.	ICT makes learning more interesting	4.37	0.70
5.	I look forward to lessons that require me to use ICT.	4.21	0.78
6.	ICT provides better learning experiences.	4.23	0.80
7.	I learn more with ICT than I do with books.	4.03	0.89
8.	Using ICT in learning would make subject matter more interesting.	4.21	0.81
9.	ICT gives me opportunity to learn more.	4.21	0.79
10.	Using ICT encourages me to explore Situations	4.19	0.80
11.	Learning with ICT offers real advantages	4.23	0.76
12.	I think that technology supported learning makes me more effective.	4.18	0.79
13.	The idea of using ICT in learning excites me	4.16	0.79
14.	ICT can help me to acquire Understanding and insight in learning.	4.19	0.82
15.	Working with ICT to learn promotes My Systematic approaches.	3.96	0.98
16.	The use of ICT to learn scares me	3.70	1.30
17.	The use of ICT in learning is time consuming	3.62	1.31
18.	The idea of using ICT in learning makes me sceptical	3.48	1.28
19.	Use of ICT in learning may slow down syllabus coverage.	3.62	1.35
	Overall students' attitude towards ICT in learning	**4.09**	**0.90**

Decision rule: mean >3 = positive attitude, mean = 3 = Neutral, Mean < 3 = negative attitude

Table 6 revealed the result of the attitude ATBU Bauchi students have towards using ICT in learning. It can be seen from the mean ratings of the positively keyed statements (1-15) that the students have positive attitude towards the use of ICT in learning. The table also suggested that the students have been using ICT in their learning and they do not feel unease with it. On the negatively keyed statements (15-19), the results also showed that the students have positive attitude towards the use of ICT in learning by disagreeing with all of the statements. This was evident from their mean ratings which range from 3.48-3.70 showing that the means were above average. Overall students' attitude towards ICT in learning was positive (Mean=4.09 S.D=0.90).

Ho_1: There is no significant difference between the attitude of ATBU lecturers and students towards ICT

Table 7: Result of Independent t-test Comparing the Attitude of ATBU Lecturers and Students towards ICT

Respondents	N	Mean	SD	t	df	P-value	decision
Lecturers	349	4.0380	0.48057	.894	1475	.372	insignificant
Students	1128	4.0124	0.42918				

Decision rule: reject null hypothesis if p<0 .05 otherwise accept.

Table 7 showed the result of an independent t-test carried out to compare the mean scores of ATBU Bauchi lecturers and students on their attitude towards ICT. The result displayed showed that there is difference in the mean score between lecturers (M=4.0380, S.D=0.48057) and students (M=4.0124, S.D=0.42918) which is 0.0256. The result of the independent t-test showed that there was no statistical significant difference between the average attitude of ATBU Bauchi lecturers and students towards ICT (p= .372). Going by the decision rule, the null hypothesis was retained since p>0.05. Therefore, it can be concluded that lecturers and students of ATBU Bauchi do not differ in their attitude towards ICT.

Ho_2: There is no significance difference between the attitude of ATBU male and female lecturers towards ICT

Table 8: Result of Independent t-test Comparing the Attitude of ATBU Male and Female Lecturers towards ICT

Gender	N	Mean	SD	t	df	P-value	decision
Male	311	4.0632	.47173	2.66		347	0.011 Significant
Female	38	3.8319	.50860				

Decision rule: reject null hypothesis if p<0 .05 otherwise accept.

Table 8 showed the result of an independent t-test carried out to compare the mean scores of male and female lecturers on their attitude towards ICT. The result displayed showed that there was difference in the mean score between male (M=4.0632,

S.D=0.47173) and female (M=3.8319, S.D=0.50860) lecturers which is 0.2313. The mean score of male lecturers was above that of their female counterparts. The result of the independent t-test showed that there was a statistical significant difference between the mean scores of male and female lecturers which was in favour of the male students (p=0.011). Going by the decision rule, the null hypothesis was rejected and the alternate hypothesis was accepted since p<0.05. Therefore, it can be concluded that male and female lecturers of ATBU Bauchi differ in their attitude towards ICT.

Ho_3: There is no significance difference between the attitude of ATBU male and female students towards ICT

Table 9: Result of Independent t-test Comparing the Attitude of ATBU Male and Female Students towards ICT

Gender	N	Mean	SD	t	df	P-value	decision
Male	750	4.0539	.39911	4.364	1126	0.000	Significant
Female	378	3.9300	.47321				

Decision rule: reject null hypothesis if p< 0.05 otherwise accept.

Table 9 showed the result of an independent t-test carried out to compare the mean scores of male and female students on their attitude towards ICT. The result displayed showed that there is difference in the mean score between male (M=4.0539, S.D=0.39911) and female (M=3.9300, S.D=0.47321) students which is 0.1239. The mean score of male students was above that of their female counterpart. The result of the independent t-test showed that there was a statistical significant difference between the mean scores of male and female students which was in favour of the male students (p= 0.000). Going by the decision rule, the null hypothesis was rejected and the alternate hypothesis accepted because p<0.05. Therefore, it can be concluded that male and female students of ATBU Bauchi differ in their attitude towards ICT.

H_{o4} : The age of ATBU lecturers is not a determining factor in terms of their attitude towards ICT.

Table 10: The Mean Scores of Attitude of ATBU Lecturers towards ICT based on their ages

Age group	N	Mean	S.D
25 and below	28	4.2341	.31221
26 – 30	108	4.1209	.47207
31 – 40	104	4.0160	.45738
41 – 50	86	3.9399	.53404
51 and above	23	3.8768	.46751
Total	349	4.0380	.48057

The mean scores of lecturers' attitude towards ICT based on their ages is as shown in table 10. The result showed that there were differences in mean scores of the lecturers based on their age groups. Lecturers within the age group 25 and below have the highest mean (4.2341) while those that were within the age group 51 and above have the lowest mean (3.8768).

Table 11: Result of ANOVA Comparing the Attitude of ATBU Lecturers towards ICT in Terms of their Age Group

	Sum of Squares	df	Mean square	F	p-value
Between Groups	3.294	4	.824	3.676	0.006
Within Groups	77.074	344	.224		
Total	80.368	348			

Decision rule: reject null hypothesis if p<0 .05 otherwise accept.

` Table 11 showed the result of the One Way Analysis of Variance (ANOVA) test performed. The result showed that a significant difference in attitude towards ICT existed between the age groups of ATBU Bauchi lecturers F(4, 344) = 3.676, p =0.006. In order to check where the difference lied among the attitude of lecturers towards ICT in terms of their age group, Tukey's HSD post hoc test was conducted. The result of the post hoc test showed that there was a significant difference between the attitude of lecturers towards ICT within the age group 25 and below and 41-50 F(4, 344) = 3.676, p =.036. However, no significant difference existed between the attitude of lecturers towards ICT within the age groups 25 and below and 26 – 30 F(4, 344) = 3.676, p =.792, between the age groups 25 and below and 31 – 40 F(4, 344) = 3.676, p =.196, between the age groups, 25 and below and 51 and above F(4, 344) = 3.676, p =.059, between the age groups 26 – 30 and 31 – 40 F(4, 344) = 3.676, p =.490, between the age groups 26 – 30 and 41 – 50 F(4, 344) = 3.676, p =.065, between the age groups 26 – 30 and 51 and above F(4, 344) = 3.676, p =.166, between the age groups 31 – 40 and 41 – 50 F(4, 344) = 3.676, p =.805 between the age groups 31 – 40 and 51 and above F(4, 344) = 3.676, p =.706 and between the age groups 41 – 50 and 51 and above F(4, 344) = 3.676, p =.980.

H_{o5}: The age of ATBU students is not a determining factor in terms of their attitude towards ICT.

Table 12: The Mean Scores of Attitude of ATBU Students towards ICT based on their Age Group

Age group	N	Mean	S.D
25 and below	765	4.0513	0.39821
26 – 30	286	3.9532	0.45356
31 and above	77	3.8449	0.42918
Total	1128		

The mean scores of the attitude of students towards ICT based on their ages is as shown in table 12. The result showed that there were differences in mean scores of the students based on their age group. Students that fall within the age group 25 and below have the highest mean (4.0513) while those that fall within the age group 31 and above have the lowest mean (3.8449).

The result of the One Way Analysis of Variance (ANOVA) test performed to determine whether a significant difference existed between the age group of ATBU Bauchi students is as shown in table 13.

Table 13: Result of ANOVA Comparing the Attitude of ATBU Bauchi Students towards ICT in Terms of their Age Group.

	Sum of Squares	df	Mean square	F	p-value
Between Groups	4.324	2	2.162	11.966	0.000
Within Groups	203.260	1125	.181		
Total	207.584	1127			

Decision rule: reject null hypothesis if p<0 .05 otherwise accept.

The results indicated that there was a statistical significant difference between the attitude towards ICT for the three age groups F(2, 1125) = 11.966, p = 0.000. In order to check where the difference lied among the attitude of students towards ICT in terms of their age group, Tukey's HSD post hoc test was conducted. The result of the post hoc test

showed that there was a significant difference between the attitude of students towards ICT within the age group 25 and below and 26 - 30 F(4, 344) = 11.966, p =.003 and between the age groups 25 and below and 31 and above F(4, 344) = 11.966, p =.000. However, no significant difference existed between the attitude of students towards ICT within the age group 26 – 30 and 31 and above F(4, 344) = 11.966, p =.116.

10. Discussion

In order to answer research question one, lecturers were asked to respond to 18 likert-scale type statements dealing with their attitude towards ICT. The number of lecturers who correctly responded to the questionnaire is 349. The data was analyzed using frequency, percentage, mean and standard deviation. As shown in table 5 the item with the highest mean (M=4.51) is the use of ICT makes me much more productive while the item with the lowest mean (M=3.10) is the state of facilities discourages me from using ICT. This indicates that even though the lecturers are optimistic about the advantages they derive from ICT, which have made them productive, surprisingly some are not encouraged by the state of facilities readily available in the university. It could be that some of these facilities are outdated, or not adequately available as expected. The overall mean for analysis of question one suggests that generally, lecturers of ATBU Bauchi have positive attitude towards ICT (M=4.04). This is consistent with the results of other similar studies (Yushua, 2006; Ösodol, Indoshi & Ongati, 2010; Murithi & Indoshi, 2011; Kullberg, 2011; Balta & Duran, 2015). This favourable attitude towards ICT exhibited by the lecturers might be as a result of the usefulness of ICT in general. Thus, in order to enhance the utilization of ICT, lecturers should use ICT more frequently, use ICT for various educational tasks, and should believe that ICT makes a difference in their students' education and in the quality of their work.

This present study contradicts the findings of Hew & Brush (2007) who found negative attitude of teachers towards ICT and Sarangi (2003) who also found that teacher educators have a low positive attitude for ICT though not negative.

Similarly, research question two determines the attitude of students towards ICT. The students were asked to also respond to 18 likert-scale type statements dealing with their attitude towards ICT. One thousand one hundred and twenty-eight students correctly responded to the questionnaires. The data was analyzed using frequency, percentage, mean and standard deviation. Based on the result of the analysis obtained, the students,

just like their lecturers, have a positive attitude towards ICT (see Table 4). This positive attitude towards ICT is more evident in the students' responses on item 1 which is the use of ICT makes me much more productive (M=4.49) and item 5, the use of ICT saves time and effort (M=4.49) but low on item 12 which is the state of facilities discourages me from using ICT (M=3.06). This is an indication that the students also share the same views with their lecturers. They are also optimistic of the outcome of their use of ICT and how this is being achieved in a very short period of time with little effort. Some of the students also frowned at the facilities that are available in the university even though they are positive towards ICT in general. This finding is in line with Al Mahmud (2014) who found a positive attitude in the attitude of learners in special university of Bangladesh and Kubiatko & Halakova (2009) who also found a positive attitude from Slovak high school students. This positive attitude is an important indicator of willingness and first step in effective ICT utilization in general.

To answer research question three, a 19 likert-scale type statement dealing with attitude of lecturers towards the use of ICT in teaching was distributed to the lecturers and collected later for analysis. The data was analyzed using frequency, percentage, mean and standard deviation. Based on the result of the analysis in table 5, it can be seen that ATBU Bauchi lecturers have a positive attitude towards ICT in teaching. The lecturers are very comfortable with the use of ICT in teaching. This comfort may be as the result of the ease of using ICT. This agrees with Domingo & Garganté (2016), Dogan & Akbarov (2016), Kisanga (2016) Tuan, Hau & Minh, (2015). More so, Kurgat (2014) found that teachers perceived integrated E-learning approach to be superior to the conventional approach and sees it as an important approach in their teaching. Teachers who have positive attitude towards technology, feel more comfortable with using it, and usually incorporate it into their teaching (Albirini, 2004). Woodrow (1992) concludes that any successful transformation in educational practice requires the development of positive user attitude towards the new technology.

The attitude of ATBU Bauchi students towards the use of ICT in learning is also found to be positive. They are of the view that ICT can enhance their learning experiences. More so, the students, just like their lecturers are also comfortable with the use of ICT in learning. They feel that learning with ICT is very interesting; this may be as the result of the benefits of motivation, ability to arouse and sustain the interest of individuals that ICT can offer. The present study concurs with Aydinli & Elaziz (2010) who noted that students

have generally positive attitude towards the use of IWBs in language instruction and are aware of the potential uses of this technology, Kullberg (2011) who reported that students have positive attitude to ICT tools and they prefer to write using a computer rather than pen and paper. Similarly, Kurgat (2014) study revealed that students perceive integrated E-learning approach to be an important approach in their learning. Students have positive attitude towards the integrated E-learning approach. Jones *et al.* (2005) noted that students who viewed communications technologies positively can use them to enhance their learning experience. Shang (2005) who conducted a study of Taiwanese university students' attitude towards using e-mail journaling as a means to learn a second language also found a positive attitude.

Hypothesis one was aim at determining whether there is any statistical difference between the attitude of ATBU Bauchi lecturers and students towards ICT. The result of the t-test conducted revealed that though no significant difference between the attitude of ATBU Bauchi lecturers and students towards ICT (p=0.372), but surprisingly that lecturers are having more positive attitude towards ICT than students perhaps the lecturers have at one time or the other been exposed to capacity building workshops relating to ICT, thus the positive attitude to ICT can be explained. They have come to realise the place of ICT in the 21st century classroom and are ready to implement same if the enabling environment is provided. This finding is a deviation from the findings of previous studies that have found difference in the attitude of lecturers and students towards ICT (Osodol, Indoshi & Ongati, 2010; Kullberg, 2011; Gilbert, 2015) but concurs with the findings of Balta & Duran (2015), who found out that there is no difference between teachers' and students' attitude towards ICT.

Hypothesis two investigates the difference between the attitude of ATBU Bauchi male and female lecturers towards ICT. The result of the independent t-test conducted shows that there is a significant difference between the attitude of male and female lecturers towards ICT (p=0.011) which is in favour of the male lecturers. This finding is consistent with the findings of previous studies (Kubiatko, Usak, Yilmaz & Tasar 2010; Ainley & Enger, 2007; Bebetsos & Antoniou, 2008), but disagrees with Omollo, Indoshi, & Ayere (2013) and Adams (2002) who reported that females display a greater attitudinal average towards ICT than do males. On the other hand, Alshawareb & Jaber (2012), Campbell & Martin (2010), Isman *et. al*. (2012), Turel, & Johnson (2012) found that no gender difference exists between male and female lecturers. This finding is not surprising

because for women, traditional role patterns are clear obstacles in the society which causes that they do not benefit equally from the advantages of the technological progress in general.

Similarly, hypothesis three determined whether there is difference between the attitude of ATBU Bauchi male and female students towards ICT. The result of the t-test conducted shows that there is a significant difference between the male and female students towards ICT (p=0.000) in favour of the male students. This is in agreement with the finding of Mahmood & Bokhari (2012) and Balta & Duran (2015). In contrast Al Mahmud (2014) & Yusuf & Balogun (2011) established no significant difference between the attitude of male and female students. This finding indicates that even though ATBU Bauchi male and female students hold positive attitude towards ICT, the male students are more positive than their female counterparts.

The fourth research hypothesis examined the influence of age on attitude of lecturers towards ICT. The result of the ANOVA test conducted shows that there is a significant statistical difference between lecturers' attitude towards ICT and age (see Table 11). As shown in table 10, as the lecturers grow older their attitude decreases. This implies that even though all the lecturers are positive in their attitude towards ICT, the younger lecturers are more positive than the older lecturers. This result is supported by Weston & Brain 2010, Shaukanova 2016 and contradicted by Akcay, Arslan and Guven (2015), Mustafina (2016), Yushau (2006) who found no significant difference between attitude of teachers towards ICT in terms of age.

Similarly, the result of ANOVA test conducted to test hypothesis five indicated that there is a significant difference between the attitude of ATBU Bauchi students towards ICT and their age (see Table 13). This difference is also in the same direction with their lecturers. As students grow older their attitude towards ICT tends to decrease (see table 12). This finding is in line with previous research (Kubiatko & Halakova, 2009; Balta & Duran, 2015) who also reported a decrease in attitude towards ICT as students grow older.

11. Conclusion

This study investigated the attitude of lecturers and students towards ICT in ATBU Bauchi. In conclusion the findings of this study are:

1. Lecturers of ATBU Bauchi have positive attitude towards ICT and towards the use of ICT in teaching. This is encouraging as it has been realized that teachers' attitude towards technology is one of the significant factors in enhancing the quality of ICT usage for instruction (Yuen, Law & Chan, 1999).
2. Students of ATBU Bauchi have positive attitude towards ICT and towards the use of ICT in learning. This is also encouraging because it has been pointed out that students' positive attitude towards ICT have a positive impact on their motivation as well as self-esteem Nassoura (2012)**.**
3. No significant difference was found between the attitude of ATBU Bauchi lecturers and students towards ICT.
4. A significant difference is found between the attitude of ATBU Bauchi male and female lecturers towards ICT. Although, both gender have positive attitude towards ICT, male are more optimistic than their female counterparts.
5. Similarly, a significant difference is found between the attitude of ATBU Bauchi male and female students towards ICT. Even though they both have positive attitude towards ICT, male students are more positively inclined than the female students.
6. It was found that age has influence on the attitude of ATBU Bauchi lecturers towards ICT. As the lecturers get older, their attitude towards ICT tends to decrease.
7. In the same way, the age of ATBU Bauchi students has influence on their attitude towards ICT. As students grow older, their attitude towards ICT decreases as well.

12. Recommendation

1. Since positive attitude towards ICT usually foretells future ICT use, policy makers can make use of the lecturers' and students' positive attitude towards ICT in this current study for proper integration of ICT in their teaching and learning practices.

2. With a positive correlation between lecturers' and students' attitude towards ICT and towards the use of ICT in teaching and learning, the need to encourage the lecturers and students to develop a more positive attitude towards ICT by providing an enabling environment as well as incentives so that they can be innovative in their use of ICT in teaching and learning.

3. To sustain the positive attitude of lecturers, training of lecturers on how to use ICT for instructional purposes will play a motivational role which invariably will lead to more effective utilization of ICT in instructional delivery.

4. To also sustain the positive attitude of students, the university should provide more ICT facilities and introduce "the 4-student-per-computer-policy" as authorised by NUC to encourage more effective utilization of ICT in their learning.

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