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Statistical Analysis and Evaluation of the Attitude of Social Studies Teachers towards the use of Computers

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Abstract:
This study investigates the attitude of social studies teachers towards the use of Computers in teaching and learning process. Questionnaires were administered to selected secondary school social studies teachers in ondo state of Nigeria. The responses were collected, collated and analyzed using SPSS Statistical Package. In analyzing the data, each item in the questionnaire were grouped and treated accordingly. The analysis was done using simple percentages and T-test statistic. The result shows that the attitudes of social science teachers towards Computer technology is good and it also reveals that there is no significant difference between attitude of male teachers and their female counterparts towards the use of Computer technology. The results were tabulated for brevity and clarity, the necessary recommendations were thereafter outlined.

Keywords: Social Studies, teachers, attitude, Computer, ICT, T-Test, Technology

1. Background

Technology emerged so as to solve problems associated with human needs in more productive ways. If there is no problem to solve, then technology would not be developed or even adopted. Applying this principle to educational technology would mean that educators should create and adopt technologies that address educational problems, of which there are many. In other to improve the teaching and learning process, technological tools in form of hardware and software needed to be provided in schools and teachers needed to be adequately trained so as to effectively use them for instructional purposes. Under this dispensation, both researchers and educators have emphasized the role that teachers' attitudes toward information technology play as a crucial factor in the successful use of computers in the teaching and learning process. Computer technology may facilitate efficiency but their potentials in education may become unrealizable if there is no change in teachers' pedagogical strategies that are dependent on teachers' right attitudes. Teachers are the primary "gatekeepers" in terms of successful integration of technological initiatives in schools, their attitude is worth being studied because attitude is able to predict behavioural intention and actual behavior.

2. Purpose of the Research

The purpose of this research is to investigate the positive and negative attitude of teachers towards the use of computer technology in the teaching and learning of social studies and subsequently suggest ways of solving the problems of teachers' negative attitudes towards the use of Computer technology in schools. Moreso, practical ways in which teachers can create personal interest in the use of Computer technology in teaching and learning process was explored. This work also sought to determine the factors which may influence the development of a healthy Computer attitude in social studies teachers. As a result, this study looked at two research objectives. It sought to determine if socio-demographic variables like gender, age or years of experience in the work environment had any effect on computer attitudes, self-efficacy and computer anxiety of teachers. Above all, the research also sought to know the positive and negative attitude of teachers in the use of computer technology in schools and it also established the importance of computer technology in the teaching and learning process.

3. Literature Survey

The use of computers in educational system settings has been acknowledged as having positive effects on learners' capabilities in positive ways. Fishbein and Ajzen (1975). The change from teacher centered education system to learner centered education system all over contributed to the use of computer technology in education. Today, in numerous educational and training sessions, interactive computer programmes are used to teach young students and adults computer literacy skills. This is occasioned by the word "knowledge driven world" as conceived by Hawkins (2002). The concept

"knowledge driven world" necessitates that education reform practices should focus on equal access and quality of education which is expected to highlight the importance of change in the education sectors through the use of computer technology and through equipping new generations with enhanced skills to operate in the 21st century.

Studies have shown that computer anxiety, lack of confidence, and lack of enjoyment influence both the acceptance of Computers and their use as teaching and learning tool (Gressard and Loyd, 1986; Smith and Kotrlik, 1990; Woodrow, 1991; Fletcher and Deeds, 1994). The need to therefore disengage the minds of teachers from such fears and replace these misconceptions with confidence building measures cannot be overemphasized.

According to Zhao and Cziko (2001) teachers are agents of change in relation to technological innovation integration in education. In literature, positive correlations have been established between various Computer experiences and attitudes (Dupagne and Krendel, 1992; Levine and Donitsa-Schmidt 1998; Winter, Chudoba and Gutek, 1998; Smith, Caputi and Rawstorne, 2000; Yıldırım, 2000; Gaudron and Vignoli 2002). According to Gardner, Dukes and Discenza (1993), Computers play important role to reduce computer anxiety which fosters teachers' resistance to incorporating ICT in teaching and learning environment. Yang, Mohamed, and Beyerbach (1999) explored the relationship between Computer experience and various demographic variables such as, age, gender, ethnicity/culture, subject area, educational level, and type of school. They discovered that teachers' negative attitudes towards Computers change as soon as they receive formal training in the use of computers. Dupagne and Krendel, (1992) and Koohang (1987).

4. Research Questions
The following research questions guided the study:
a) What are the competencies of teachers in the use of Computer?
b) What is the level of teachers Computer anxiety, phobia and innovativeness?
c) Are the teachers willing to learn and incorporate technology in their teaching and learning?
d) What are the perceived relevance of Computers to teachers in their teaching and learning?

5. Research Instrument
A well-structured questionnaire was used. A cross-sectional descriptive study was used to know the frequency / percentage of teachers' attitude to the use of Computer in the teaching and learning of social studies. The questionnaire designed was clear, unambiguous, unbiased, and have face validity. The questionnaire was divided into two parts or sections. First section is the Bio-data of the respondents, such as age, religion, marital status, qualification, gender etc. The second part of the questionnaire consist of questions to be answered by the respondents concerning the attitude of teachers to the use of Computer in the teaching and learning of social studies, and it comprise of twenty questions. The questionnaire was personally distributed to the teachers after permission was sought from the selected social studies principal and social studies teachers in particular.

6. Research Methodology
The questionnaire was administered to social studies teachers in some selected secondary schools to elicit information on the use of Computers to teach. The population consists of all the social studies teachers in public secondary schools in ondo state. The sample consists of selected 106 teachers of social studies in different schools in ondo state, Nigeria that returned the questionnaire. The responses obtained from these samples were used in the analysis of the attitudes of the teachers.
One hundred and twenty questionnaires were administered to the teachers of social sciences. After several visits to the schools, the investigator was only able to collect one hundred and six questionnaires.
The data analysis methods used in the study are t-test and simple percentages. This was done in order to make responses clearer on the responses carried out on the questionnaire. In analyzing the data, each item in the questionnaire was treated separately.

7. Presentation of Result
The results obtained in this work is grouped into three, which are
(a) The demographic characteristics of the sample
(b) Feedback from the respondents.
(c) T-Test statistic
The results were carefully tabulated for brevity and clarity so as to make the result of the analysis carried out on the data obtained to be clearly comprehended.

7.1. Demographics
Percentage descriptive statistical analysis was performed on the data collected through the administered questionnaires. The statistics of respondents to the administered questionnaire shown in table 1 is indicative of the fact that

respondents within ages 30-40 years' categories are more than every other age categories. Those within this age group actually constituted 52.8% of the entire respondents.

Moreso, table 1 also shows that; 66% of the respondents are female, 67.9% of the respondents are married, 82.1% are Christians, 42.6% are NCE holder, and 51.9% of the respondents had already spent between 1 to 5 years in the teaching service.

In view of the above demographic data of the respondents as shown by table 1, it can therefore be reliably concluded that a reliable level of sincerity in the responses to the questions can be expected.

Demographic variable	Attribute	Frequency	Percentage (%)
Gender	Male	36	34.0
	Female	70	66.0
Age	18-29 years	26	24.5
	30-40 years	56	52.8
	41-49 years	17	16.0
	50- 60 years	7	
Marital Status	Single	34	32.0
	Married	72	67.9
Religion	Christianity	87	82.1
	Islamic	17	16.0
	Others	2	1.9
Qualification	NCE	45	42.6
	OND	14	13.2
	HND	08	7.5
	B.ED	27	25.5
	OTHERS	12	11.3
Years in Service	1 – 5	55	51.9
	6 – 10	28	26.4
	11 – 15	13	12.3
	16 - 20	3	2.8
	21 Above	7	6.6

Table 1: Demographic characteristics of the sample

7.2. Feedback

In response to the opinions of teachers in respect of:

(a) Computer anxiety, Computer Phobia and innovativeness
(b) Willingness to learn and incorporate Computer Technology in teaching and Learning Process
(c) Competence in the use of Computer
(d) Relevance of Computer to their teaching and Learning Process. Tables 2, 3, 4 and 5 shows the feedback obtained in the above mentioned context.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
If given the opportunity to use a Computer, I am afraid that I might damage it in some ways.	6 (5.7%)	5 (4.7%)	3 (2.8%)	49 (46.2%)	43 (40.6%)
I hesitate to use a Computer for fear of making mistakes, I can't correct.	9 (8.5%)	20 (18.9%)	1 (0.9%)	38 (35.8%)	38 (35.8%)
Using a Computer does not scare me at all.	50 (47.2%)	47 (43%)	2 (1.9%)	4 (3.8%)	3 (2.8%)
I would avoid taking a job if I know it involved working with Computer	6 (5.7%)	16 (15.1%)	10 (9.4%)	44 (41.5%)	30 (28.3%)

Table 2: Teachers Response in Respect of Computer Anxiety, Phobia and Innovativeness?

Percentage descriptive analysis of the discrete statistics of responses in table 2 above shows that 86.8% of the respondents did not agree that they can damage the Computer if given opportunity to use it. While 10.4% agreed. This actually signifies that only 10.4% of the respondents have not used a Computer before, and so are consequently scared of spoiling the Computer if allowed to use it.

Moreso, according to table 2 above, 71.7% of the respondents did not agree that they always hesitate to use a Computer for fear of making mistakes, they cannot correct, while 27.4% agreed. This actually implies that 27.4% of the respondents avoid using a Computer simply because they do not want to make mistakes, they won't be able to correct.

Table 2 above further reveals that 91.5% of the respondents agreed that using a Computer does not scare them at all while 6.6% of the respondents disagreed. This implies that only 6.6% of the respondents would not even attempt using a Computer because of their inability to use or operate the Computer. Thus, 91.5% of the respondents can therefore be said to have some measure of Computer literacy.

Finally, according to responses outlined in table 2, 69.8% of the respondents disagreed that they will avoid taking a job if they know it involved working with a Computer; while the remaining 20.8% of the respondents agreed that they will avoid taking a job that involve working with a Computer. This actually implies that 69.8% of the respondents will be willing to integrate the use of the Computer technology in their teaching and learning process. Meanwhile, 20.8% of the respondents in their own case would prefer to continue with the traditional method of teaching and learning they had been used to.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I could probably teach myself most of the things I need to know about Computer.	18 (17%)	57 (53.8%)	5 (4.7%)	18 (17%)	8 (7.5%)
I only use Computer at school when I really need to.	10 (9.4%)	37 (34.9%)	7 (6.6%)	28 (26.4%)	24 (22.6%)
I will use Computer regularly throughout school.	19 (17.9%)	37 (34.9%)	12 (11.4%)	29 (27.3%)	9 (8.5%)
I would work harder if I could use Computer.	60 (56.6%)	32 (30.2%)	2 (1.9%)	10 (9.4%)	2 (1.9%)

Table 3: Teachers Response in Respect of Willingness to Learn and Incorporate Computer Technology in their Teaching and Learning Process?

Percentage descriptive analysis of the discrete statistics of responses in table 3 above shows that 70.8% of the respondents agreed that they could teach themselves most of the things they need to know about Computer. This implies that 70.8% of the respondents are actually willing and have self determination to learn the Computer through self-effort, while 24.5% are not willing to do so. Meanwhile, 44.3% of the respondents agreed that they use Computer at School whenever they need to do so, while 49.1% disagreed. This implies that only 44.3% of the respondents have unrestrained access to the Computer System in their school and 49.1% of the respondents have little or no access to the Computer in their school.

Moreso, according to table 3, above, 52.8% of the respondents agreed that they will use the Computer regularly at school while 35.8% disagreed. This implies that 52.8% of the respondents are actually willing and ready to integrate the use of the Computer into their teaching and learning process. In the same vein 35.8% of the respondents are not willing to use the Computer in the teaching and learning process.

Finally, according to responses outlined in table 3, 86.8% of the respondents agreed that they would work harder, if they can use the Computer while the remaining 11.3% of the respondents disagreed. This actually implies that 86.8% of the respondents agreed that integration of the Computer technology will enhance productivity in their teaching and learning process.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Most things that a Computer can be used for I can do it just as well myself.	28 (26.4%)	50 (47.2%)	3 (2.8%)	16 (15.1%)	9 (8.5%)
I can make the Computer do what I want it to do.	30 (28.3%)	61 (57.5%)	2 (1.9%)	11 (10.4%)	2 (1.9%)
I am not in complete control when I use a Computer.	14 (13.2%)	30 (28.3%)	9 (8.5%)	44 (41.5%)	9 (8.5%)
I do not need someone to tell me the best way to use a Computer.	10 (9.4%)	40 (37.7%)	9 (8.5%)	37 (34.9%)	10 (9.4%)
If I got problems using the Computer, I can usually solve them one way or the other.	18 (17%)	62 (58.5%)	3 (2.8%)	20 (18.9%)	3 (2.8%)

Table 4: Teachers Response in Respect of Competence of in the use of Computer?

Percentage descriptive analysis of the discrete statistics of responses in table 4 above shows that 73.6% of the respondents agreed that they can do as well, most of the things that the Computer can be used for. Moreso, according to table 4 above, 85.8% of the respondents agreed that they can make the Computer do whatever they want it to do. This actually implies that high level of Competence in the use of the Computer.

Table 4 above further reveals that 75.5% of the respondents agreed that they can solve any problem they encounter while using the Computer without asking for assistance from anybody, this further justifies the fact that the respondents have a reasonable high level of competence in the use of Computer in their teaching and learning process.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Computers help me improve my work better.	51 (48.1%)	50 (47.2%)	1 (0.9%)	4 (3.8%)	0 (0%)
Computers make it possible to work more productively.	52 (49.0%)	50 (47.2%)	2 (1.9%)	2 (1.9%)	0 (0%)
Computers can allow me to do more interesting and imaginative work.	47 (44.3%)	49 (46.2%)	5 (4.7%)	4 (3.8%)	1 (0.9%)
Computers can enhance the presentation of my work to a degree which justifies the extra effort.	51 (48.1%)	45 (42.5%)	3 (2.8%)	4 (3.8%)	3 (2.8%)

Table 5: Teachers Response in Respect of the Perceived Relevance of Computer to their Teaching and Learning Process?

Percentage descriptive analysis of the discrete statistics of responses in table 5 above shows that 95.3% of the respondents agreed that Computers help them improve their work better. Moreso, according to table 5 above, 96.2% of the respondents also agreed that Computers make it possible to work more productively.

Table 5 above further reveals that 90.6% of the respondents agreed that Computers can allow them do more interesting and imaginative work.

Finally, according to responses outlined in table 5, 90.6% of the respondents agreed that Computers can enhance the presentation of their work to a degree which justifies the extra effort. Thus, responses in table 5 are strong enough to conclusively affirm that all the respondents are of the positive opinion that Computers can help them improve their work better because it can bring about increased productivity, and it can enhance presentation of a more interesting and imaginative work.

7.3. T-Test Statistic
 ➤ H_0:Gender has no significant influence on the attitude of teachers towards Computer Technology.

➢ H_1:Gender has significant influence on the attitude of teachers towards Computer Technology.

	Levene's Test for Equality	T-test for Equality of Means							
								95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	0.080	0.778	0.216	104	0.83	0.04206	0.19494	-0.34451	0.42864
Equal variances not			0.220	74.9	0.826	0.04206	0.19091	-0.33826	0.42239

Table 6: T-Test Statistic for Male and Female Respondents

Table 6 reveal that the computed value for t i.e. t_{value} is 0.220 while the tabulated t_{value} is 1.66 ($t_{\alpha, 105}$) where α is 0.05. i.e. $T_{tabulated}$ = 1.66 and $T_{calculated}$ = 0.220.

Thus, since the $T_{calculated\ is}$ less than the $T_{tabulated,}$ We thus have every statistical reason not to reject the null hypothesis (H_O). We therefore conclude that Gender has no significant influence on the attitude of teachers towards Computer technology.

The summary of this finding as obtained from the t-statistic is that there is no difference between the attitude of male and those of their female counterparts towards Computer technology.

8. Conclusion
This research work focused on investigating the positive and negative attitude of teachers in the use of Computer Technology in the teaching and learning of social studies. Among other things the results of this study indicated that the attitude of teachers towards Computer technology is positive and this has gone a long way in enhancing the teachers' disposition towards the use of Computer technology in schools.

The result showed that teachers attitude in respect of Computer anxiety, lack of confidence and Computer Experience is positive, thus, teachers acceptance of Computers and their use as a teaching and learning tool is good. Moreso, reducing fear and anxiety about the use of Computer from the minds of social studies teachers has helped to develop their confidence.

9. Recommendations
The major focus of the study is to investigate the attitude of social studies teachers towards the use of Computer technology in their teaching and learning process. Based on the results obtained from this investigation, the following recommendations are hereby made:
1. Social Studies teachers should be encouraged to adopt the use of Computer Technology in their teaching and learning process.
2. Relevant curriculum review should be carried out to enforce the integration of Computer Technology in schools.
3. Conferences, seminars and workshops on E-Learning, should be organized for the students and the teachers alike.
4. Guidance and counseling unit should be established in all schools so as to offer advisory services to the teachers on methodologies of integrating Computer Technology into their teaching and learning process.
5. Government and all Education stakeholders should provide adequate Computer system, facilities and information technology equipment in schools and all educational institutions.
6. Government should encourage and provide all necessary incentives for the teachers to efficiently carry out their function.
7. Parents should endeavour to allow their children/wards have access to Computers at home so as to make them familiar with the functionalities.

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