

Analysis of Teachers Perception on the Use of Computer Tutor Laboratory in the Teaching - Learning of Visual Arts in Secondary Schools



Visual Arts

Keywords: Students, Visual Arts, Teaching, Learning, Computer Tutor Laboratory

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Abstract

The design of this study was an explorative in nature that use opinion research questionnaire on the teachers' perception on the adoption and use of Computer Laboratory in the teaching and learning process of Visual Arts in both private and public senior secondary schools in Oyo state. The analysis of the data collected through the designed study questionnaire from thirty (30) sampled representatives' respondents selected from the three zonal post primary schools board in the state, clearly indicated that teachers' perception on the adoption and use of Computer Laboratory in the teaching and learning process is positively significant to make the computer laboratory relevant. Both the taught and teachers will benefit positively as long as the owners of schools, schools' administrators, parents and government supports are given rightly and timely. The correlation analysis carried out clearly indicated a significant relationship among the five variables – teaching and learning (independent) and government/owners' support, teachers' readiness and school support for the adoption and use of computer laboratory in the teaching and learning process of Fine and Applied Arts in secondary schools in Oyo State (dependent). There are five (5) null hypotheses formulated for this study and the results from the statistical testing rejected all the null hypotheses at 0.05 level of significance. The conclusion from this study made it compelling for all the stakeholders in the teaching and learning process of Visual Arts to embrace Computer Tutor Laboratory not as a vogue in this era of hi-tech for meaningful teaching and learning outcome in Visual Arts. Based on this note, some recommendations were made that will make the above possible and get the required stakeholders' supports feasible and meaningful.

INTRODUCTION

The world has moved from the age of print media and print literacy to the era of data based technology and digital culture. The world has also become a “global village” as a result of the current employment of automated gadgets in not only the literacy but also the visual art. Computer in the perception of Taiwo (2012), has become not only the medium of disseminating information, but only a gadget or tool used in the teaching and learning of not only science based subjects but also those of humanities, including Fine and Applied Arts. Computer is the novel or modern technological and automated gadgets used in the analysis of complex programmes in not only the teaching and learning of sciences, social science but also in the pedagogy of visual Arts.

In the view of Egbe (2011), Computer mediated instruction (CMI) is used in the teaching and learning of science, arts, and vocational subjects. Different automated packages are employed in the teaching and learning of visual Arts. In the perception of Olumorin (2002) cited in Olafare (2011), Visual Arts refers to the art of making or creating pictures through patterns and shapes. Olumorin (2002) Continues in his definition of Visual Arts that creativity is the pivot on which the aesthetics of Visual Arts rotates. According to him, Visual Art is related to educational technology. In the view of Tickton (1978), educational technology could be defined as a systematic way of designing, carrying out and evaluating the total process of learning in terms of specific objectives, and focused on carrying out a scientific research on human and non-human resources to bring out more effective instruction. Computer gadgets and packages are employed as viable tools used in visual and creative arts. Computer –aided instructions (CAI) are employed in the vocational subjects like Visual Arts, and technical drawing at the lower and upper secondary schools. Computer –aided instructional programmes and packages according to Olafare (2011) are interactive animation, sound, video and simulations which allows students to work at their pace individually or in group with potentials for immediate feedback. Therefore the focus of this study is to evaluate teachers' perception on adoption and use of computer laboratory in the teaching and learning of Fine and Applied Arts in Oyo State Secondary Schools. The research has been designed for the following purposes;

- (i) to identify the impacts of the teachers' perception on the employment of computer laboratory (CL) on

- the teaching and learning of visual arts in Oyo State of Nigeria,
- (ii) to find ways of improving the impacts of the teachers' perception on the introduction of computer – tutor - laboratory (CL) on the teaching and learning of visual arts in Oyo State of Nigeria, and also
 - (iii) to make recommendations for curriculum planners in Nigeria towards a proper implementation of the computer laboratory (CL) in facilitating the teaching and learning of visual arts in Oyo State of Nigeria.

Therefore in line with the above objectives, this work has been designed to proffer answers to the following research questions:

- (i) What is the significant effect of teachers' perception on the possible impacts of the introduction of Computer Laboratory (CL) on the teachers' skill in the teaching of visual arts in Oyo State?
- (ii) What is the significant effect of teachers' perception on the effects of the introduction of CL on the students' skills and learning of visual arts in Oyo State?

This study would be significant in expanding the terrain of research in the use of information communication technology (ICT) in teaching and learning of visual Arts in Nigerian secondary schools. This work is also germane in giving necessary recommendations to stake-holders in Nigerian education on how to improve students' skills in Fine and Applied Arts. Information and Communication Technology (ICT) has been introduced into the teaching and learning of visual arts in Europe, America and even in Africa. For instance, Fine and Applied Arts teachers (or Artists) often employ ICT to manipulate motifs and images into digital format to be reworked. Automated machine, that is computers, are used as tools in teaching and testing tools in visual arts pedagogy (Olafare 2011). As a result, the employment of ICT in visual arts pedagogy often creates certain positive effects in the production of arts works and its aesthetics. However, it can also lead to some negative effects on the side of the learner. This work is *significant* because it will be utilized in bringing out the negative effects of ICT on visual arts pedagogy and also proffer solutions to those problems. Also, it will equally be used in identifying the positive effects of ICT on the teaching and learning of visual arts in Nigerian secondary schools.

Theoretical Framework

There are many theories of perceptions one can find but the most relevant to this work is the Interface Theory of Perception: The perceptions of an organism are a user interface between that organism and the objective world (Hoffman 1996, 2006 and 2008). This theory addresses the natural question, "If our perceptions are not accurate, then what good are they?" The answer becomes obvious for user interfaces. The colour, for instance, of an icon on a computer screen does not estimate, or reconstruct, the true colour of the file that it represents in the computer. If an icon is, say, green, it would be ludicrous to conclude that this green must be an accurate reconstruction of the true colour of the file it represents. It would be equally ludicrous to conclude that, if the colour of the icon doesn't accurately reconstruct the true colour of the file, then the icon's colour is useless, or a blatant deception. This is simply a naive misunderstanding of the point of a user interface. The conventionalist theory that our perceptions are reconstructions is, in precisely the same manner, equally naive.

Its predicates and the predicates required for a reconstruction can be entirely disjoint: Files, for instance, have no colour. And yet a user interface is useful despite the fact that it's not a reconstruction. Indeed, it's useful because it's not a reconstruction. We pay good money for user interfaces because we don't want to deal with the overwhelming complexity of software and hardware in a PC. A user interface that slavishly reconstructed all the diodes, resistors, voltages and magnetic fields in the computer would probably not be a best seller. The user interface is there to facilitate our interactions with the computer by hiding its causal and structural complexity, and by displaying useful information in a format that is tailored to our specific projects, such as painting or writing.

Our perceptions are a species-specific user interface. Space, time, position and momentum are among the properties and categories of the interface of *H. sapiens* that, in all likelihood, resemble nothing in the objective world. Different species have different interfaces. And, due to the variation that is normal in evolution, there are differences in interfaces among humans. To the extent that our perceptions are satisficing solutions to evolutionary problems, our interfaces are designed to guide adaptive behaviour in our niche; accuracy of reconstruction is irrelevant. To understand the properties and categories of our interface we must understand the evolutionary problems, both phylogenetic and ontogenetic, that it solves.

The interface theory of perception predicts that (1) each species has its own interface (with some variations among conspecifics and some similarities across phylogenetically related species), (2) almost surely, no interface performs reconstructions, (3) each interface is tailored to guide adaptive behaviour in the relevant niche, (4) much of the competition between and within species exploits strengths and limitations of interfaces, and (5) such competition can lead to arms races between interfaces that critically influence their adaptive evolution. In short, the theory predicts that interfaces are essential to understanding the evolution and competition of organisms; the reconstruction theory makes such understanding impossible.

The way teacher view the role of computer laboratory in the teaching – learning process will to a large extent determine the level and degree of its usage. Teacher forms an impression which is favourable or otherwise, depending on specific traits teacher attribute to computer laboratory. Teacher perception of computer laboratory is predicted upon what they feel media can do in teaching-learning process. However, evidence abounds that what teachers said were their reasons for not using computer laboratory were not true (Zepp, 2005; Scrimshaw, 2004; Sugar, Crawley & Fine, 2004; Cohen, 1996; Hubbord, 1999).

Over the years, many research studies have pointed out various external deterrents for the utilization of audiovisual media. The major deterrents reported were budget difficulty in obtaining materials, lack of computer laboratory facilities and lack of trained computer laboratory personnel (Higgins & Moseley, 2001; Richardson, 1996; Windschitl & Sahl, 2002).

It must be noted that perception can be influenced by the personality characteristics of the perceiver. It can also be influenced by the features of the thing/object perceived. Unfortunately, in any perception study, one is not sure which has more control over the other (Simonsen & Dick, 1997).

Eichoiz and Rogers (1994) have suggested that here are psychological components in teachers' perception of computer laboratory. Aquino (1994) has found significant personality differences between acceptors and rejectors of adopting and using computer laboratory. Other researchers have noted that some teachers appeared to perceive computer laboratory as threatening and perhaps in human. Studies have shown, however, that teachers generally have favourable disposition toward the role of computer being used as instructional aids.

The call for adoption and use of computer laboratory in the teaching and learning of Fine and Applied Arts is a direct relevance to the work of a behaviourist, B. F. Skinner, in his work on operant conditioning with pigeons, that began working with programmed instruction in the late 1950s. He believed that the development of teaching machines capable of teaching students skills such as arithmetic and spelling, using operant conditioning theories as a basis for his efforts. While Skinner's true message was of the need to develop programs of instruction, the initial attention was monopolized by the machines themselves, leading to the "teaching machine revolution." Eventually the production of these machines far outpaced the development of the programs they were designed to run, and attention would ultimately turn toward the content itself, known as programmed instruction. Excitement grew quickly over Skinner's grand promises of the effectiveness of this new approach (Saettler, 1990).

In spite of the popularity of Skinner's theories, schools were slow to adopt teaching machines in the classrooms. Emerging research also began to question the validity of Skinner's claims of success despite reports of success from various schools that adopted the method. The dividends from the adoption and use of computer laboratory, where instruction machines will be gathered are obvious than imagined.

METHODOLOGY

Research Design

The design of this study adopts the descriptive research survey. The study was designed to investigate the usage of Computer Tutor Laboratory (CTL) in the teaching-learning problem of Fine and Applied Arts in Nigeria Secondary School in Oyo State. Structured questionnaire was used to elicit responses from the respondents.

Population

The study was carried out in Nigeria Secondary Schools in Oyo State. This research work centered on the effects of using Computer Assisted Instruction. Oyo State is politically divided into three (3) senatorial zones. In each zones, there is one zonal office of Post Primary Schools. Board that is overseeing the running and management of secondary schools. So, that study covers all the three (3) local office e.g

1. Ibadan Ibarapa Zone
2. Ogbomoso Zone
3. Saki Zone

These secondary schools were selected because their teachers are well introduced to various technology of teaching and learning. They possess the facilities required to support the research work. Moreover, schools cut across Federal, State and Private Owned institutions.

The population of the study comprises of all Fine and Applied teachers in the chosen secondary schools in Oyo State. There is at least one Fine and Applied Art teacher for each school. Out of about three hundred Fine and Applied Arts Teachers in Nigerian Secondary Schools in Oyo State, a sample size of about 30 respondents were chosen; 10 respondents from each zone.

Sample/Sampling Techniques

The sample for this study is thirty (30) respondents. Random sampling and stratified random sampling techniques were used. In this study stratified random sampling techniques was used to ensure all zones were included in the study. Random sampling techniques was used to select 10 teachers each from the three (3) zones in the state.

Research Instrument

For this study, the research instrument used for data collection is a structural questionnaire on the effects of Computer - Tutor – Laboratory (CTL) on the teaching and learning process of Fine and Applied Art. The questionnaire would be divided into three sections. The first section consists of item intended to address the effects of Computer - Tutor – Laboratory (CTL) in teaching and learning of Fine and Applied Arts. Each item in the second and third section of the instrument was assigned a five-point response scale, while item in third section were assigned a four point response scale. The responses options are Very High (VH), High (H), Moderate (M), Low (L) and Very Low (VL) with numerical values of 5, 4, 3, 2 and 1 assigned to the items in section A and section B respectively. The respondents were asked to rank the response options to an item based on the level at which each item was required; while the third section was used in obtaining information on personal characteristics of the respondents.

Validation of the Instrument

For this study, the designed questionnaire was subjected to face validation by the experts in technology. The three experts are lecturers in Teacher Education Department. Each of the validates were asked to delete or ad items in relation to the research, and to make suggestions for improving the instrument towards meeting the objectives of the study. Their corrections and suggestions would be incorporated into the final instrument. Thirty copies of the research questionnaire were administered on the respondents chosen from Ibadan, Ibarapa Zone and Oyo State. The data obtained was subject to Cronbatch’s coefficient reliability test and the result was found to be 0.76. This shows high reliability co-efficient.

Procedure of Data Collection

The following steps would be taken in carrying out the study:

- Visiting the selected schools for management approval for the study.
- Meeting with the secondary school teacher for prior introduction.
- Administration of research questionnaire to the respondents.

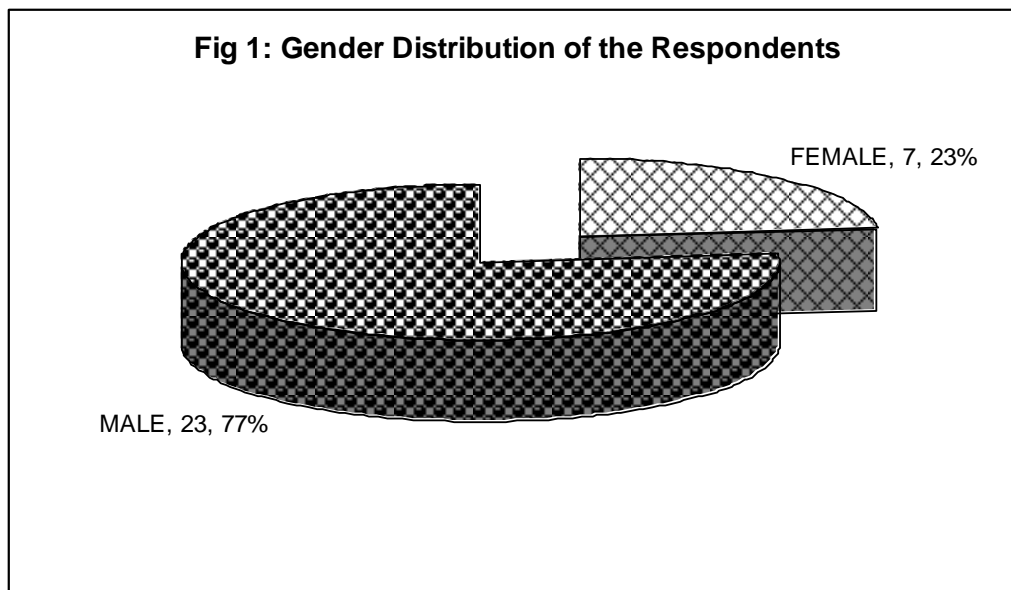
The completed questionnaire would be collected back with 100% return rate.

Method of Data Analysis

Data collected through the questionnaire were sorted out, arranged and summarized into table for statistical analysis to establish mean, standard deviation, variance, co-efficient and T-test co-efficient at 0.05 level of significance. Based on this result, decisions were made to accept or reject the study hypotheses.

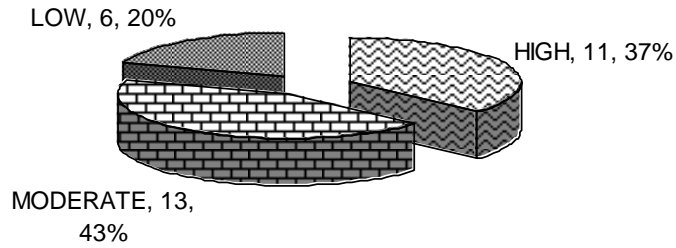
RESULTS AND DISCUSSION

4.1 DESCRIPTIVE ANALYSIS



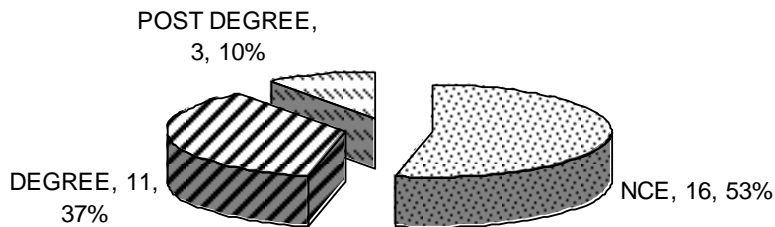
From the above Fig. 1, the majority of the respondents are male teachers. This explains gender disparity in the fine and applied arts as occupation in favour of men.

Fig. 2: Distribution of the Respondents' Level of Computer Literacy

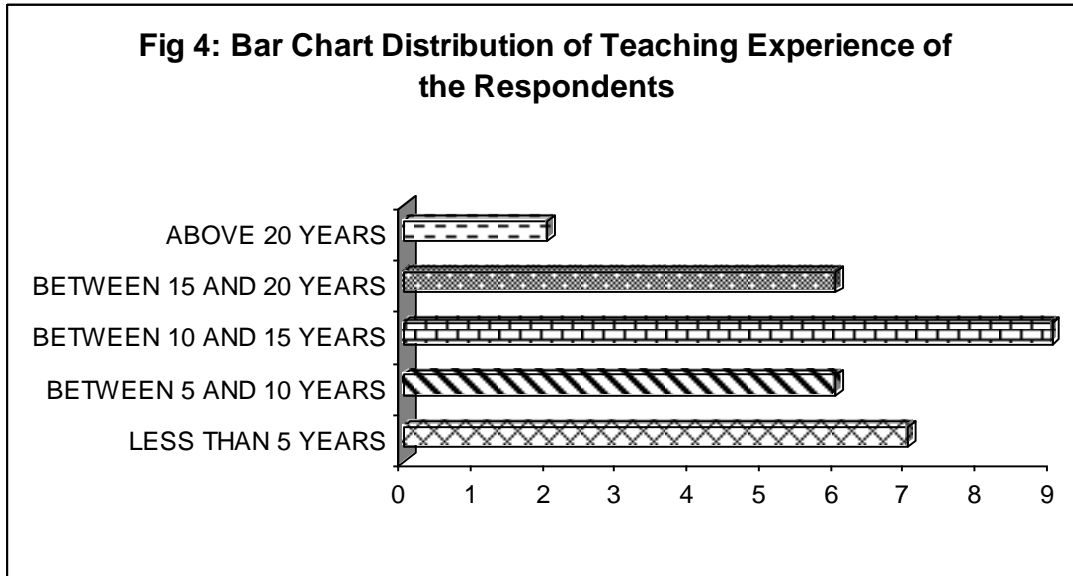


From fig. 2 above, the respondents are computer literates with only 20% of them with low level of computer education and usage.

Fig. 3: Distribution of Educational Qualification of the Respondents



As shown in fig. 3 above, majority of the respondents are NCE holders followed by degree holders as Fine and Applied Arts teachers in the sampled secondary schools in Oyo State.



From fig. 4 above, the majority of the respondents have above 5 years of teaching experience while 50% of them have above 10 years of teaching experience but the bulk of the respondents have between 10 and 15 years of teaching experience as Fine and Applied Arts teachers in the sampled secondary schools in Oyo State.

Table 1: Analysis of Respondents' Responses on the Effect of using Computer Tutor Laboratory in the teaching - learning of Visual Arts

Vari-able	Item	N	Mean	Mode	Standar d Deviati on	Sig. (2-tail)	If Sig. (2- tailed) <0.05 Accept, other - wise Reject
Teach- ing	Improves ability of Visual Arts teachers to teach	30	4.56	High (4.0)	0.143	0.003	Accepted
	Enhances Visual Arts teachers' effectiveness	30	4.02	High (4.0)	0.341	0.006	Accepted
	Increases the Visual Arts teachers' access to students both in and out of school	30	3.77	Moderate (3.0)	0.412	0.005	Accepted
	Makes class control to be effective and easy	30	4.81	High (4.0)	0.076	0.017	Accepted
	Impacts on the Visual teacher perception of his/her role as a teacher	30	3.52	Moderate (3.0)	2.34	0.327	Rejected
	Impacts on the Visual Arts teachers' perception of the subject.	30	4.67	Very High (5.0)	0.122	0.010	Accepted
	Improves the Visual Arts Students' ability to learn	30	3.87	High (4.0)	0.534	0.042	Accepted
	Simplifies Visual Arts learning instructions for students	30	3.51	High (4.0)	0.467	0.002	Accepted
	Stimulates the students' interest			High		0.000	

Learn- ing	to learn and practice Visual Arts	30	4.66	(4.0)	0.092		Accepted
	Increases the students' sense of creativity	30	4.11	High (4.0)	0.368	0.021	Accepted
	Improves students perception of Visual Arts	30	4.00	High (4.0)	0.298	0.001	Accepted
	Impacts on students' learning outcome positively	30	3.91	High (4.0)	0.468	0.027	Accepted
	Impacts on students' access to learning materials on Visual Arts	30	4.04	High (4.0)	0.106	0.026	Accepted

At 0.05 level of significance

Source: Field Survey, 2013

Comments:

All the items under the effects of Computer Laboratory were accepted as relevant to measure its effects on:

- i. Teaching except impacts on the Visual teacher perception of his/her role as a teacher and
- ii. Learning.

From the above, the overall effects of Computer Tutor Laboratory on the teaching learning process of Visual Arts in Nigeria Secondary Schools are accepted as facts that cannot be denied be it in the public or private schools. The implication of this is the use of Computer Tutor Laboratory becomes a useful issue in stimulating the interest of both the teacher and students to teach and learn Visual Arts especially at that level before gaining admission into tertiary institutions and impact on their creative power.

Table : Correlation coefficients for Teachers' Perception on Introduction of Computer Tutor Laboratory

		Effects on teaching	Effects on learning
Effects on Teaching	Pearson Correlation	1.00	.775**
	Sig. (2-tailed)		.000
	N	30	30
Learning	Pearson Correlation		1.00
	Sig. (2-tailed)		.000
	N		30

** . Correlation is significant at the 0.01 level (2-tailed).

Comment

From table three above, the correlation coefficients revealed that all the observed variables correlate with each other significantly. The relationship is also positive. The implication of this is:

i. If Computer Laboratory impacts teaching positively, it will impact learning also in the same direction and vice versa and

Testing of Hypotheses

Hypothesis One

H₀₁: There is no significant effect of Teachers’ Perception on Computer Laboratory on the teaching of Visual Arts

H₁₁: There is significant effect of Teachers’ Perception on Computer Laboratory on the teaching of Visual Arts

Table 4: One-Sample Test on Effects of Computer Laboratory on Teaching of Visual Arts						
	Test Value = 0					
					95% Confidence Interval of the Difference	
	T	Df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Teaching of Visual Arts in Secondary Schools	15.206	29	.000	1.52000	1.3191	1.7209

From table 4, the sig. Calculated was found to be 0.00, which is less than 0.05, then the study rejected the null hypothesis which says: “there is no significant effect of Teachers’ Perception on Computer Laboratory on the teaching of Visual Arts” and the study concluded that “there is significant effect of Teachers’ Perception on Computer Laboratory on the teaching of Visual Arts.”

Hypothesis Two

H₀₂: There is no significant effect of Teachers’ Perception on Computer Laboratory on the learning of Visual Arts.

H₁₂: There is significant effect of Teachers’ Perception on Computer Laboratory on the learning of Visual Arts.

Table 5: One-Sample Test on effect of Computer Laboratory on the learning of Visual Arts						
	Test Value = 0					
					95% Confidence Interval of the Difference	
	T	Df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Learning of Visual Arts in Secondary Schools	18.242	29	.000	1.34000	1.1924	1.4876

From table 5, the sig. Calculated was found to be 0.00, which is less than 0.05, then the study rejected the null hypothesis which says: “there is no significant effect of Computer Laboratory on the learning of Visual Arts” and the study concluded that “there is significant effect of Computer Laboratory on the learning of Visual Arts.”

Summary

This study set out to analysis the responses of Visual Arts' teachers on the adoption and use of Computer Laboratory in the teaching learning process of Visual Arts in both public and private secondary schools in Oyo State of Nigeria. The research instrument for the study consists of three sections. Section A is on the effects of Computer Tutor Laboratory on teaching – learning process of Visual Arts in secondary schools in Oyo State of Nigeria while section B examines the effects of supports from government, owners of schools, Visual Arts teachers' readiness and the school to aid the adoption of Computer Tutor Laboratory for the teaching – learning process of Visual Arts. The last section is to collect the biographic information of the respondents.

There are thirty (30) respondents used for this study, this represents 77% male respondents and 23% female respondents. 43% of the respondents have moderate level of computer literacy while 37% of them have high level of computer literacy. Majority of the respondents have above five (5) years of teaching experience and more than 50% of them have above ten (10) years of teaching experience. From the analysis of data collected, the study reveals that computer laboratory has effects on teaching and learning issues examined except visual arts teacher perception of his/her role as a teacher. Five (5) null hypotheses were formulated and rejected. And the study concluded that:

- i. There is significant effect of Teachers' Perception on Computer Laboratory on the teaching of Visual Arts;
- ii. There is significant effect of Teachers' Perception on Computer Laboratory on the learning of Visual Arts;

Discussion of the Results

There are thirty (30) respondents used for this study, this represents 77% male respondents and 23% female respondents. 43% of the respondents have moderate level of computer literacy while 37% of them have high level of computer literacy. Majority of the respondents have above five (5) years of teaching experience and more than 50% of them have above ten (10) years of teaching experience. From the analysis of data collected, the study reveals that computer laboratory has effects on teaching and learning issues examined except visual arts teacher perception of his/her role as a teacher. Two (2) null hypotheses were formulated and rejected.

From the analysis of Section C, it was observed that the majority of the participants are male Visual Arts' teachers. This shows the gender bias for the subject thereby making the profession male dominated affairs. Also, majority of the respondents are computer literates with teaching experience of above five years. Their responses reflect the quality of the experience they have and their knowledge of computer.

In order to answer the research question – what are the possible impacts of Teachers' Perception on Computer Laboratory on the teachers' skill in the teaching of visual arts in Oyo State? The analysis of part I show that all the items included in the two parts are significant measures of the two variables under investigation with the exception of one item under teaching that was found to be not significant issue for effect of Computer Tutor Laboratory on teaching. The finding was that Computer Laboratory can not impact on the Visual teacher perception of his/her role as a teacher. From the major findings from Section B, it can be deduced that computer has become a vogue that is relevant for the teaching – learning process of Visual Arts in secondary schools in Oyo State too. To make the teaching of Visual Arts as practical and interesting, the need for the adoption of Computer Laboratory becomes a necessary issue for consideration in our secondary schools especially for Visual Arts. Also to the research question – what are the effects of the introduction of Computer Laboratory on the students' skills and learning of visual arts in Oyo State? The analysis of part II of section A shows that Teachers' Perception on computer laboratory has effects on the skills and learning of visual arts in Oyo State. This shows a very significant of import of relevance in the adoption and use of computer laboratory in the

students' skill and learning acquisition of Visual Arts. To make this workable, a change of attitude as regards the adoption and use of computer laboratory will make this possible where access to the laboratory is not hindered.

The correlation between all the five parts that made up Section A and B shows that they all have significant relationship. If we want improved performance in the teaching learning of Visual Arts to take place through the adoption and use of Computer Tutor Laboratory, then, there must be equal and corresponding actions to improve the Teachers' Perception on impact of the Computer Tutor Laboratory. The conclusion from this analysis is that a positive support will bring about a positive improvement in teaching and learning process in Visual Arts in our secondary schools if Computer Tutor Laboratory is to be adopted and used for Visual Arts.

Recommendation

Based on the findings from the study, the following recommendations are made:

1. Since Computer Tutor Laboratory effective impacts on the teaching and learning process of Visual Arts in our secondary schools, it becomes necessary to emphasis the needs for positive perception of teachers on the use of Computer Tutor Laboratory.
2. It is not sufficient for owners of schools to improve Teachers' Perception on the use of Computer Tutor Laboratory in the teaching learning process of visual arts in our secondary schools, but enabling environment should be put in place. The appropriate authority should provide needed and efficient but relevant Computer Tutor Laboratory. It goes beyond the mere assemblage of computers in a room to be labelled Computer Room.

Recommendation for further study

From the review of literature carried out, copious areas of investigations exist for future research. However to validate the findings of this study, the size of the respondents can be increased and as well as the areas of the study. Interstate study can also be carried out.

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