

Utilization of Computer Assisted Instruction (CAI) for Effective Teaching and Learning of Financial Accounting in Senior Secondary Schools in Benue State, Nigeria

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Abstract

This study aimed at assessing the usage of Computer Assisted Instruction (CAI) for effective teaching and learning of financial accounting in senior secondary schools in Benue state, Nigeria. The study employed a descriptive survey design. Based on the available literature, 33 item questionnaires for financial accounting teachers and 33 item questionnaires for financial accounting students using a four-point rating scale was developed and used for the study. The respondents were 62 financial accounting teachers and 180 financial accounting students in zone B senatorial district of Benue state. The entire population of the financial accounting teachers was adopted as its size is manageable while a multi-stage sampling technique was used to obtain the population of financial accounting students. Mean, standard deviation and t-test were the statistical tools used for data analysis. The findings of the study revealed a low extent of utilization of CAI in teaching and learning of financial accounting in the schools surveyed. Based on these findings, it was recommended among others that the barriers that militate against the integration of CAI in teaching and learning of financial accounting should be addressed with a view to removing them.

Keywords: Computer Assisted Instruction (CAI), Effective Teaching And Learning, Financial Accounting, Senior Secondary Schools

INTRODUCTION

The evolution of Information and Communication Technology (ICT) has led to significant changes in all spheres of human endeavors, such as economy, politics, business and social. The field of education is not left out as ICT has positively affected teaching, learning and research (Abanyam & Onimawo, 2020). ICT has quickened prominently the development of new teaching and learning technologies such as Computer Assisted Instruction (CAI), Computer Based Learning (CBL), Computer Based Instruction (CBI), Computer Enriched Instruction (CEI), Computer Managed Instruction (CMI), internet, e-mail, projector among others as the use of these ICT gadgets has made teaching and learning in the classroom much easier, concrete, real and more result oriented (Jimoh et al., 2021; Abanyam et al., 2017; Ogiagah & Ofulue, 2014) further posited that the information age has altered the old-style ways of instruction to more interesting and fascinating ways that demand students to play active role in teaching and learning situation.

Hitherto, the teaching of Financial Accounting has been done mostly by conventional (traditional) or slightly sophisticated teacher centered methods rather than modern student oriented strategies and techniques. The transmission of knowledge and information has been realized with the usual form of lectures or discussions requiring physical presence of both the teacher and the student. This trend is conspicuous as chalk boards and test books seem to have continued to dominate classroom activities in most of the secondary schools in Benue State in particular and Nigeria at large. This trend may have denied the young secondary school graduate the opportunity of having a smooth transmission from classrooms to industry or work place due to lack of required knowledge and relevant ICT skills for doing accounting work in this 21st century.

In Benue State, most government secondary schools have been supplied with sets of computers and some have installed internet facilities by the state government through the Ministry of Education (MOE). Some private schools are also provided with these facilities by their proprietors/proprietresses. This has enabled some of the secondary schools to employ the use of CAI in teaching and learning of mostly science subjects like physics, chemistry, Biology and in some cases English Language. Despite this effort, it seems there is lack of CAI facilities and trained personnel to utilize CAI to teach financial accounting as it is currently obtainable with the aforementioned subjects. This may have adversely inhibited the effective use of CAI in facilitating learning of accounting subjects. If this trend is not quickly brought under control, financial accounting students may not be able to cope with accounting related courses in the higher institutions and the graduates may not secure jobs in modern establishments. It is no doubt an accurate prediction that the educational use of computer technology will surely continue to grow.

Many educators, researchers, legislators and parents have expressed concern about the educational effectiveness of using CAI in schools and whether gender affects the +usage of CAI for instructional delivery. It is in line with this that the study was conducted in secondary schools in Benue State, Nigeria. Thus, the study was guided by the following research questions: to what extent are CAI facilities available for use by financial accounting teachers? To what extent do financial accounting teachers use CAI in teaching? To what extent are CAI facilities available for use by financial accounting students? And to what extent do financial accounting students use CAI in learning? Furthermore, the study hypothesized that male and female financial accounting teachers as well as students in secondary schools do not significantly differ in their opinions on the use of CAI in teaching and learning.

LITERATURE REVIEW

Financial Accounting is one of the subjects taught to students starting from senior secondary school level to the tertiary level of education in Nigerian educational system. A financial accounting graduate must have adequate knowledge of how to manage financial records on a regular basis. According to Abanyam (2014), Financial Accounting is the process of recording, classifying, selecting, interpreting, summarizing and reporting financial data of an organization to the user for objective assessment and decision making. The aim of teaching Financial Accounting at the senior secondary school in Nigeria as summarized by Joshua and Obi (2013) is to provide opportunities for the learners to acquire the basic accounting skills as well as to equip them with requisite knowledge to become book-keepers, account clerks as well as cashiers. They are expected to undergo in future additional training in Accountancy in order to become professional Accountants, Managers, Auditors and Tax managers in business firms (Hu, 2020).

According to Abanyam et al. (2017), teaching and learning are said to be two sides of the same coin. While teaching is described as the activities of educating, instructing, or imparting knowledge or skills by a teacher, learning on the other hand is the acquisition of knowledge or skills through study, experience, instruction or being taught. The authors further observed that, for teaching of Financial Accounting to be worthwhile, certain key factors must provide a foundation. These include teacher knowledge, enthusiasm and responsibility for learning, classroom activities that encourage learning, among others.

Computer Assisted Instruction (CAI), as viewed by Ogiagah and Ofulue (2014), is an interactive instructional technique whereby a computer is used to present the instructional material and monitor the learning that takes place. CAI uses a combination of text, graphics, sound and video in enhancing the learning process. According to Esene (2012), CAI facilitates and improves teaching and

learning process by the use of computer systems (Thompson & Gutschall, 2015). CAI make use of practical oriented and interactive teaching programs such as drill and practice, tutorials, problem-solving and simulation to teach different topics as well as assess students understanding. Abanyam et al. (2017) also posited that CAI supplements standard classroom teaching with computers. In some cases the computer functions as the only sources of information. In other cases, the computer acts as a virtual tutor. It is worthy of note that not every use of a computer in the classroom is considered as CAI. Basically CAI provides drill - and- practice, tutorial, games, simulation, discovery and problem solving. In this regard, computer is used to offer to the students the expected learning objectives, instructional aids, progress tracking, evaluation, and feedback on learner's performance (Abanyam et al., 2017).

Drill and practice provide opportunities for students to repeatedly practice the skills that have previously been presented and that further practice is necessary for mastery (Ramazan, 2015). Tutorial activities include both the presentation of information and its extension into different forms of work, including drill and practice, games and simulation. The interactive nature drill and practice program allows students to ask questions and receive instant feedback (Ramazan, 2015; Totiem, 2012; Oliver, 2011). If the answer is correct, the student is routed to more challenging problems, if the answer is incorrect, various computer messages will indicate the flaw procedure, and the program will bypass more complicated questions until the student shows mastery in that area. Games software often creates a contest to achieve the highest score and either beat others or beat the computer. Simulation software can provide an approximation of reality that does not require the expense of real life or its risk, while discovery approach provides a large data base of information specific to a course or content area and challenges the learner to analyze, compare, infer and evaluate based on their explorations of the data (Ramazan, 2015; Totiem, 2012; Oliver, 2011). Problem solving approach helps children develop specific problem solving skills and strategies (Mudasiru et al., 2015).

The teacher centered approach which in most cases, makes the teacher act as the catalogue of knowledge and the students, on the other hand, made to be passive recipient. This technique of teaching has been reported to be widely used in the teaching of Financial Accounting in particular, and Business Education courses in general, with the resultant effect being lack of interest and poor performance in the subject by the students (Abanyam et al., 2017; Ogiagah & Ofulue, 2014; Oliver, 2011). There has been an over-reliance on copying already worked-out examples in the text books. It is even more discouraging seeing a teacher reproducing on the board same illustration found in the textbook without making any new input while the students will be busy copying same examples to their notebooks without opportunities for interactions. The learners are expected to memorize these examples and reproduce same on the examination day. Research studies on the effects of CAI on secondary school students' performance in Biology, English Language, Geography, dietetics education in Nigeria and other parts of the world confirmed that CAI has been effective in enhancing students' performance especially, when it is used alongside conventional or traditional methods (Adolphus & Omeodu, 2020; Nwanne & Agommuoh, 2017; Ramazan, 2015; Thompson & Gutschall, 2015; Nasser & Ra'ed, 2012). The new technology is a great improvement on the former and the use of innovative approaches in teaching Accounting is offering new potentials for imparting knowledge that would enable financial accounting graduates to compete favorably with their counterpart in other parts of the world (Jimoh et al., 2021; Adolphus & Omeodu, 2020; Nwanne & Agommuoh, 2017; Joshua & Obi 2013; Igbo, 2011).

Integrating CAI into teaching and learning of Financial Accounting offers the learner the possibility of learning at home, classroom or in office, thus saving time and effort by not having to travel to another place to learn. In comparison to learning from a book or classroom setting, CAI can offer the learner a more active role (Ramazan, 2015; Owoso et al., 2014; Nasser & Ra'ed, 2012;). Active participation is an established precursor to knowledge acquisition and can be supported with new learning technologies such as Bulletin Board System (BBS), Whiteboard, video conferencing and so on (Zou et al., 2020). The more tasks related actions that a learning process includes, the higher the retention rate and the greater the ability to transfer the knowledge to new situations.

Several empirical studies exist that examined the use of CAI package in teaching and learning in other fields of education. For instance, Ramazan (2015) found that participants learning capacity of the introductory statistics could be improved successfully when CAI is used as a supplement to regular lecture in teaching introductory statistics course. Busarin (2015) revealed that CAI for English subject has a good efficiency in teaching and learning process for the third level of primary students. Nasser and Ra'ed (2012) revealed that student's aptitude to learning statistics at the beginning level would

improve drastically as a result of CAI usage in teaching preparatory statistic subjects. In the same vein, Mudasiru et al. (2015) showed that the performance of students exposed to CAI either individually or cooperatively were better than their counterparts exposed to the conventional classroom instruction. Furthermore, Ada et al. (2012) indicated that students taught using computer assisted instruction package performed significantly better than their counterparts taught using the conventional method of instruction. These empirical studies revealed that apart from being more than just an instructional tool, CAI is an effective individualized and cooperative instructional technique for teaching and learning. Furthermore, studies on CAI have shown that students have positive and favorable opinion towards the technology. Researchers also found that the effect of CAI on male and female in teaching and learning situation is the same (Adolphus & Omeodu, 2020; Zou et al., 2020; Abanyam et al., 2017; Nwanne & Agommuoh, 2017).

Even though CAI has been found to be an effective tool for instructional delivery, literature has revealed that gender plays a role in its usage in instructional delivery. Abanyam (2014) in a study found that gender differences between male and female teachers in relation to ICT usage. In the same way, Ghavifekr and Rosdy (2015) posited that gender has the tendency of revealing significant moderation effect on the relationship between perceived usefulness of an ICT tool and users' attitude, and also between subjective norms and intention to use CAI tools. However, the authors observed that the moderating effect on ICT usage is shown more with male teachers than with their female counterparts. Similarly, Ghavifekr and Rosdy (2015) revealed that the moderating effects on student's attitude toward the use of ICT provided were not statistically significant. Some empirical researches also showed that perceived usage of ICT tools is more obvious on male than the female workers (Abanyam, 2014; Ford & Chen, 2011). Ghavifekr and Rosdy (2015) attributed the gender variation in relation to attitude toward ICT tools usage to the social roles of the males and females teachers in some cultures.

Despite the numerous benefits associated with the use of CAI as a modern teaching and learning technique, its effective utilization seems to be highly challenged by gross inadequate ICT facilities, lack of qualified personnel, inadequate funding, epileptic power supply, and so on. The most worrisome issue is "how many of the business subject teachers can teach using CAI or any other modern teaching and learning technology"? Are the business subject teachers computer literate and competent enough to use the available technologies? This research therefore, seek to find out if the utilization of CAI in teaching Financial Accounting in secondary schools in Benue state is adequate or not.

METHODOLOGY

Survey research design was employed. According to Abanyam and Onimawo (2020), a research survey is one in which the entire population or representative sample is studied by collecting and analyzing data from the group through the use of structured questionnaire. This design is suitable for this study because the opinions and facts that were elicited from financial accounting teachers and students on the use of CAI in teaching and learning of accounting subjects in senior secondary schools in Benue state were collected and analyzed using questionnaire from a representative of the population. The population of the study was 662 consisting of 62 financial accounting teachers and 600 financial accounting students in four local government areas in zone B senatorial district of Benue state, which includes Gwer-East, Makurdi, Gwer-West and Gboko.

There was no sample for financial accounting teachers. All 62 respondents, which represents 100% of the targeted population was used. The entire teachers' population was adopted as its size was manageable. On the other hand, the sample size for the financial accounting students was 180 respondents as presented in Table 1. A multi-stage sampling technique was employed to select financial accounting students as follows:

Stage 1: A purposive sampling technique was used to select zone B senatorial district for its dense population of urban and rural secondary schools.

Stage 2: Two-way cluster sampling technique was used to select 4 local government areas out of the 7, and 3 secondary schools in each of the 4 local government areas randomly selected.

Stage 3: A proportionate sampling technique was also used to select 30% of the financial accounting students' population.

Table 1. Population and sample distribution of financial accounting teachers and students in the selected secondary schools in 4 Local Government Areas

S/N	L.G.A	Name of School	Teachers Pop	Sample 100% of pop	Students Pop	Sample (30% of Population)
1	Makurdi	Government College, Makurdi	5	100	50	15
2		Mount Saint Gabriel's Sec. School, Makurdi	6	100	60	18
3		Vaatyav College, Makurdi	8	100	60	18
4	Gwer-East	Mount saint Michael's Sec. School, Aliade	6	100	40	12
5		Government Sec. School, Ikpayongo	3	100	40	12
6		Government Sec. School, Taraku	3	100	30	9
7	Gwer-West	Government comprehensive Sec. Sch. Naka	4	100	50	15
8		Calvin Foundation College, Naka	3	100	40	12
9		Mount Lassar College, Naka	2	100	40	12
10	Gboko	Government Sec. School, Gboko	8	100	60	18
11		Gboko Commercial College	10	100	80	24
12		Kings Comprehensive College, Gboko	4	100	50	15
	Total		62		600	180

Source: School Attendance Register (2020)

Key to abbreviation on the Table: S/N=Serial Number; L.G.A= Local Government Area; Pop= Population

Instrumentation

The instrument that was used for data collection is a two set of structured questionnaires adapted from the study of Joshua and Obi (2013). One set of the questionnaire elicited information from accounting teachers, while the other set was used to obtain responses from the accounting students. The modified questionnaires were titled "Utilization of computer assisted instruction for effective teaching of financial accounting" (UCAIETFAQ) and "Questionnaire on computer assisted instruction for effective learning of financial accounting" (QUCAIELFA) for teachers and students respectively. Both questionnaires were divided into two sections: A and B. sections A of each sets of the questionnaires focused on the respondent's demographic information such as name of school, gender, local government area of school location and instruction to guide the respondents when filling the questionnaire. The section B of QUCAIETFA contained 33 items. Table 4 with 18 answered questions on extent of availability of CAI facilities for use by financial accounting teachers. Table 5, with 15 items answered questions on extent to which financial accounting teachers use CAI in teaching. Section B of QUCAIELFA contains 37 items, of which Table 6 with 20 items answered questions on extent of availability of CAI facilities for financial accounting students, and Table 7, with 17 items answered questions on extent to which financial accounting students use CAI in learning. The response on items was based on a four point scale of Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE), with ratings of 4, 3, 2, and 1 respectively.

The internal consistency of the instrument was carried out using Cronbach alpha reliability method. The questionnaires were administered on 30 respondents, comprising 10 teachers and 20 students offering accounting in Secondary schools in Cross River State, which is outside the study area but have similar characteristics. The questionnaires were retrieved and analyzed using Statistical Package for Social Sciences (SPSS) version 20. The analysis yielded reliability coefficients of 0.80, 0.68, 0.77, and 0.85 for the four variables under focused. The results indicated that the questionnaire items were highly reliable.

Method of Data Collection and Analysis

The researchers obtained written permission from all the Principals whose schools were used for data collection. The two sets of questionnaires were administered to the respondents by the researchers and with the help of one research assistant who also help in distributing and retrieving the questionnaires. The respondents were given sufficient time to fill the questionnaire to avoid the possibility of giving hasty responses. On the whole, the exercise took two weeks.

Mean was used to answer the research questions and standard deviation to determine the closeness or otherwise of the responses from the mean, while independent t-test statistic was used to test the null hypotheses of no significant difference. In the decision rule, the real limit of number was used for interpreting the analyzed data for answering the research questions as follows: Very High Extent (VHE): 3.50 – 4.0; Highly Extent (HE): 2.50 – 3.49; Low Extent (LE): 1.50 – 2.49; and Very Low Extent (VLE): 1.00 – 1.49. A cut off mark of 1.96 was used to take decision on the standard deviation based on Fisher’s rule in Abanyam (2019) which states that, a standard deviation below or close to 1.96 shows that the respondents’ opinions are close to the mean and to each other. While a standard deviation above 1.96 of any item indicates that the respondents’ opinions are not close to the mean and to one another. In the test of hypotheses, a hypothesis of no significant difference was not rejected when the probability value is greater than or equal to 0.05 level of significance. On the other hand, where the probability value was less than 0.05 level of significance, the null hypothesis was rejected.

RESULTS

Demographic Information

The data analyses for the demographic characteristics of the respondents are presented in Table 2 and 3.

Table 2. Percentage distribution of financial accounting teachers by sex

Sex	Frequency	Percentage
Male	34	79.1
Female	9	20.9
Total	43	100.0

Data presented in Table 2 shows that, 34 male financial accounting teachers, which represents 79.1 percent participated in the study. 9 female financial accounting teachers, representing 20.9 percent also participated in this study.

Table 3. Percentage distribution of financial accounting Students by Sex

Sex	Frequency	Percentage
Male	128	71.5
Female	51	28.5
Total	179	100.0

The information in Table 3 above shows that 128 male financial accounting students, which represents 71.5 percent participated in the study. 51 female financial accounting students, representing 28.5 percent also participated in this study.

DESCRIPTIVE ANALYSES OF RESULTS

Table 4 shows that Items 9-10 and 13 recorded mean scores range from 3.79 to 3.95 indicating very high extent. This implies that financial accounting teachers to a very high extent agreed that CAI facilities are available for teaching in the secondary schools. The results also reveal that items 1, 14 and 18 with scores range of 2.56 to 3.42 indicting high extent. This reveals that financial accounting teachers to a high extent state that CAI facilities are available for teaching. On the other hand, items 8, 11-12

and 15-17 recorded mean range of 1.56 to 2.16 indicating that financial accounting teachers to a low extent assert that CAI facilities are available for teaching. Furthermore, the results in Table 4 reveals that items 2-6 had mean scores range of between 1.02 and 1.40 indicting very low extent. This reveals that financial accounting teachers to a very low extent opine that CAI facilities are available for teaching. Moreover, the standard deviations range from 0.15-1.18, which were below 1.96, indicating that the respondents were neither far from the mean nor from each other in their opinions on the availability of CAI facilities in teaching financial accounting in secondary schools in Benue State, Nigeria.

Table 4. Showing Mean and Standard Derivation of Teachers’ Responses on Availability of CAI facilities

S/No	Item statement	Mean	SD	Remark
1	I own a laptop	3.42	1.18	HE
2	Software for teaching financial accounting is sufficiently supplied by the school authority.	1.30	.47	VLE
3	Drill and practice courseware are sufficiently supplied by the school authority	1.37	.66	VLE
4	Tutorial courseware are sufficiently supplied by the school authority	1.40	.66	VLE
5	Simulation courseware are sufficiently supplied by the school authority	1.37	.66	VLE
6	Games courseware are sufficiently supplied by the school authority	1.37	.66	VLE
7	I buy all the courseware by myself	1.02	.15	VLE
8	I buy some of the courseware by myself while the school provides others	1.56	1.01	LE
9	My school is connected to an electricity power supply.	3.79	.77	VHE
10	My school has an ICT center/computer lab.	3.91	.29	VHE
11	My school ICT center/computer lab has enough computers to accommodate the entire students in the class during practical session	1.98	.34	LE
12	My school ICT center/computer lab is connected to the internet.	1.91	1.39	LE
13	My school has an alternative source of power supply	3.95	.31	VHE
14	The computer systems in our school ICT center/computer lab are functional.	2.67	.64	HE
15	The security of ICT center/computer lab in our school is guaranteed.	2.16	.49	LE
16	Relevant equipment such as scanner, photocopier, spiral binder etc are available in our school ICT center/computer lab.	2.05	.95	LE
17	There are qualified computer technologists for purposes of maintaining/servicing in my computer facilities.	1.72	.45	LE
18	Teachers and students have access to the school ICT center/computer lab for use.	2.56	.77	HE

Key: S/No=Serial Number; SD= Standard Deviation

Table 5 indicates that Item 1, with mean score of 3.72, shows that financial accounting teachers to a very high extent are aware of the integration of ICT into accounting curriculum. Also, Table 5 shows that item 3, which has mean score of 2.51, implies that financial accounting teachers to a high extent, use computer to search for relevant information related to the unit of instruction I want to teach. Again, item 10 and 14 with mean score of 2.09 and 1.79 respectively, reveals that financial accounting teachers to a low extent give students websites addresses to download programs and files of relevant information on the the unit of instruction intended to be thought. On the other hand, items 2, 4-13 and

15 recorded mean scores range of 1.28 to 1.44 indicating that financial accounting teachers to a very low extent use these CAI facilities in teaching process. Interestingly, the standard deviations ranged from 0.47-1.32, which were below 1.96, indicating that the respondents were neither far from the mean nor from each other in their opinions on the use of CAI facilities in teaching financial accounting in secondary schools in Benue State, Nigeria.

Table 5. Teachers' Mean and Standard Deviation on Extent of CAI facilities usage in teaching

S/No	Item statement	Mean	SD	Remark
1	I am aware of the integration of ICT into accounting curriculum	3.72	.77	VHE
2	I do use CAI facilities to deliver instruction.	1.44	.83	VLE
3	I do use computer to search for relevant information related to the unit of instruction I want to teach.	2.51	1.18	HE
4	I do use drill and practice courseware to deliver instruction	1.44	.83	VLE
5	I do use tutorial courseware to deliver instruction	1.40	.79	VLE
6	I do use simulation courseware to deliver instruction	1.40	.79	VLE
7	I do encourage my students to use games software to create a contest to achieve the highest score and either beat others or beat the computer.	1.42	.82	VLE
8	I do give my students assignments through their email boxes.	1.30	.47	VLE
9	I do use computer to assess and evaluate students work.	1.47	.80	VLE
10	I taught my students how to do some basic internet operations e.g. login, browsing, sending email messages e.t.c.	2.09	1.17	LE
11	80% of my lessons are delivered through CAI.	1.30	.64	VLE
12	I do engage my students in practical exercises on the use of CAI technology for mastery of skills.	1.37	.79	VLE
13	I do breakdown and analyze the topics to be learnt in software before giving them to the students.	1.35	.75	VLE
14	I do give my students websites addresses they can download programs and files of relevant information related to the unit of instruction I want to teach.	1.79	1.32	LE
15	I do secure relevant visual disk instructional software for the students to buy at a little amount.	1.28	.63	VLE

Key: S/No=Serial Number; SD= Standard Deviation

Table 6 indicates that Items 12-14 and 16 recorded mean scores range from 3.94 to 3.99 indicating very high extent. This reveals that financial accounting students to a very high extent opined that these CAI facilities are available for learning. Furthermore, items 1, 15, and 17-18 had mean ratings which ranged from 2.65 to 3.3 indicating that financial accounting students to a high extent opined that these CAI facilities are available for learning. On the other hand, items 3, 10-11 and 19-20 recorded mean range of between 1.47 and 2.45 indicating that financial accounting students to a low extent stated that these CAI facilities are available for learning. Similarly, results in items 2 and 4-9 showed that financial accounting students to a very low extent opined that these CAI facilities are available for learning. Also, the standard deviations ranged from 0.08 to 1.48, which were below 1.96, indicating that the respondents were neither far from the mean nor from each other in their opinions on the availability of CAI facilities in learning financial accounting in secondary schools in Benue State, Nigeria.

Table 6. Mean Score and Standard Deviation of financial accounting students on availability of CAI facilities

S/No	Item statement	Mean	SD	Remark
1	I own a laptop	2.72	1.48	HE
2	Software for learning financial accounting is sufficiently supplied by the school authority.	1.39	.67	VLE
3	Drill and practice courseware are sufficiently supplied by the school authority.	1.47	.78	LE
4	I buy drill and practice courseware by myself.	1.30	.47	VLE
5	Tutorial courseware are sufficiently supplied by the school authority.	1.39	.66	VLE
6	I buy tutorial courseware by myself.	1.32	.51	VLE
7	Simulation courseware are sufficiently supplied by the school authority.	1.40	.67	VLE
8	I buy simulation courseware by myself.	1.39	.66	VLE
9	Games courseware is sufficiently supplied by the school authority.	1.35	.49	VLE
10	I buy games courseware by myself	1.85	.96	LE
11	My school computer lab/ICT center has enough computers to accommodate every student in our class during practical.	2.04	.58	LE
12	My school has an alternative source of power supply.	3.95	.28	VLE
13	My school is connected to an electricity power supply.	3.99	.08	VLE
14	My school has an ICT centre/computer lab.	3.99	.08	VLE
15	My school ICT centre/computer lab is connected to the internet.	3.31	1.21	HE
16	My school has an alternative source of power supply.	3.94	.34	VLE
17	Students have access to the school ICT centre/computer lab for use.	2.65	.77	HE
18	The computer system in our school ICT centre/computer lab is functional.	3.02	.63	HE
19	Relevant equipment such as scanner, photocopier, spiral binder are available in our school ICT centre/computer lab.	2.45	.79	LE
20	There are qualified computer technologists for purposes of maintaining/ servicing in my school.	1.98	.81	LE

Key: S/No=Serial Number; SD= Standard Deviation

Table 7 indicates that item 16 had mean score of 2.64 indicating high extent. This implies that financial accounting students to a high extent use a modem for constant internet access. Moreover, items 1-3, 5, 10, 12, 15 and 17 recorded mean ratings range of 1.56 to 2.43 implying that financial accounting students to a low extent use these CAI facilities in learning. However, items 4-9, 11 and 13-14 recorded mean ratings range of 1.23 to 1.49 indicating that financial accounting students to a very low extent use these CAI facilities in learning. Again, the standard deviations range from 0.45 to 1.29, which were below 1.96, indicating that the respondents were neither far from the mean nor from each other in their opinions on the use of CAI facilities for learning of financial accounting in secondary schools in Benue State, Nigeria.

Table 7. Mean and Standard Deviation of financial accounting students on extent of CAI facilities usage in learning

S/No	Item statement	Mean	SD	Remark
1	My teacher uses ICT facilities such as CAI, Overhead Projector, electronic Boards among others to deliver instruction.	1.60	.78	Low extent
2	I do use computer to search for more relevant information related to the unit of instruction we are taught in the class.	2.21	.97	Low extent
3	I do download relevant information regarding the unit of instruction taught through the use of CAI.	1.61	.93	Low extent
4	Our teachers do give us assignments through their email boxes.	1.23	.45	Very Low extent
5	I am taught how to do some basic internet operations e.g. browsing, sending email messages e.t.c.	2.39	.86	Low extent
6	I do use drill and practice courseware of CAI to learn.	1.30	.64	Very Low extent
7	I do use simulation courseware of CAI to learn.	1.37	.78	Very Low extent
8	I do use tutorial courseware of CAI to learn.	1.37	.78	Very Low extent
9	I do use games courseware of CAI to learn.	1.37	.78	Very Low extent
10	I make use of the internet to download some material for learning of financial accounting.	2.25	1.05	Low extent
11	I am experienced and knowledgeable in the use of CAI technology.	1.42	.79	Very Low extent
12	I easily access accounting software for effective learning.	1.56	.79	Low extent
13	I use the website addresses given by my financial accounting teacher to download instructional software.	1.49	.65	Very Low extent
14	My financial accounting teacher engages us in practical exercises on the use of CAI technology for mastery of skills.	1.37	.78	Very Low extent
15	I have an alternative source of power supply at home to use when there is public power interruption.	2.43	1.29	Low extent
16	I have a modem for constant internet access	2.67	1.47	High extent
17	My parents do give me money for the purchase of visual disk instructional software and other CAI instructional materials.	1.82	.79	Low extent

Key: S/No=Serial Number; SD= Standard Deviation

Testing Hypotheses

The result in table 8 above shows that the aggregate mean responses of male and female accounting teachers are 1.684 and 1.689 respectively. The corresponding standard deviations are .665 and .826 respectively. The table further shows that the t-value -.017 is not significant at P-value of .986. Testing at alpha value of .05, the null hypothesis is retained since the P-value is greater than the alpha value. Thus, no significant difference exists between male and female accounting teachers in the use of CAI for teaching.

Table 8. T-test of male and female financial accounting teachers on extent of utilization of CAI facilities

Sex	N	Mean	SD	df	t-value	P-value	Decision
Male	34	1.684	.665	41	-.017	.986	NS
Female	9	1.689	.826				

Key: N=Number of teachers; SD= Standard Deviation, df= degree of freedom; P=probability value, NS=Not Significant

The result in Table 9 above shows that the aggregate mean responses of male and female accounting students are 1.695 and 1.828 respectively. The corresponding standard deviations are .7012 and .6263 respectively. The table further shows that the t-value of -1.178 is not significant at p-value of

.240. Testing at alpha value of 0.05, the null hypothesis is retained since the p-value is greater than the alpha value. Thus, male and female financial accounting students do not significantly differ in their use of CAI facilities for learning.

Table 9. The t-test of male and female financial accounting students on extent of utilization of CAI in learning

Sex	N	Mean	SD	df	t-value	P-value	Decision
Male	128	1.695	.7012	177	-1.178	.240	NS
Female	51	1.828	.6263				

Key: N=Number of teachers; SD= Standard Deviation, df= degree of freedom; P=probability value, NS=Not Significant

DISCUSSION

The result revealed that the extent of availability of CAI facilities for use by financial accounting teachers is very low. The finding shows that majority of the financial accounting teachers do not own a computer and are computer illiterate. Most of the schools do not have enough computers, the few that have are either confronted with the problem of light, inadequate qualified computer technologists for purposes of maintenance and inadequate software for teaching. This finding is in line with Olelewe et al. (2019) who stressed that despite the numerous benefits associated with the use of CAI as a modern teaching and learning technique, its effective utilization seems to be highly challenged by gross inadequate ICT facilities, lack of qualified personnel, inadequate funding, epileptic power supply and so on.

In the same vein, the findings showed that the extent of availability of CAI facilities for use by financial accounting students is very low. The findings revealed further that most of the students do not have laptops or desktop due to poor socio-economic state of their parents especially those from rural schools. The result also revealed that Accounting teachers, to a low extent, use CAI to teach accounting topics in the secondary schools. The findings re in consonant with positions of Abanyam et al. (2017), Ogiagah and Ofulue (2014) and Oliver (2011), who in their respective study revealed that most of the teachers do not own laptops and are not aware of the integration of ICT into school teaching. This makes them to over-rely on text books and employ other traditional methods of delivering instruction. Similarly, findings indicated that the extent to which students use CAI in learning financial accounting is low as most of the financial accounting teachers do not use ICT facilities to deliver instruction. In other words, the students learning needs to meet the objectives of the 21st century organizations cannot be realized as ICT facilities/equipment for achieving these objectives are virtually not adequate in the secondary schools surveyed.

The findings in Table 8 reveal that no significant difference exists between male and female financial accounting teachers in the use of CAI for teaching. Similarly, the findings on the hypothesis 2 further show that both the male and female financial accounting students do not significantly differ in their use of CAI facilities for learning. These findings re in agreement with Ghavifekr and Rosdy (2015) who revealed that some teachers do not use ICT facilities for instructional delivery because they lack self-confidence especially before the students who have better ICT knowledge. This assertion proved to be true when the teachers revealed poor usage of CI facilities for teaching even when some of the facilities are available to them for instructional delivery.

IMPLICATIONS OF THE FINDINGS

In a world of technology and global competitiveness, quality delivery of financial instructions is of immense importance for societal viability. Hence, knowledge, skills and values of Computer Assisted Instruction to be imparted on financial accounting students must be in tandem with global best practices. According to Abanyam and Onimawo (2020), the use of computer for learning makes students participate actively in the in the learning process, in that teachers become learners during the process, and learners sometimes teach, making participants feel relevant in the group. The students learning needs to meet the objectives of the 21st century financial institution/organization may not be realized as CAI facilities/equipment for achieving these objectives are virtually not adequate

in the secondary schools surveyed.

Accounting graduates may not find it easy to secure jobs in modern establishments if this trend of using only traditional methods of teaching and learning is not arrested. Therefore, institutions offering financial accounting, financial accounting teachers and students need to step forward to take full advantage of the innovation brought forth by the new technology because the illiterate of tomorrow will not be those who cannot read and write but those who cannot use computer and other technological devices (Olelewe et al., 2019).

This study therefore, provides some implications for not only the financial accounting teachers and their students, but to other subject teachers, students, institutions administrators, policy makers, and researchers. For instance, teachers' non utilization of CAI reflects poor possession of ICT skills, which amounts to inefficiency. In the same way, lack of modern CAI facilities such as learning management systems, portals, websites, institutional Wi-Fi, among others are evidence of administrative incompetence in meeting contemporary global best practices for teaching and learning. This, according to Abanyam et al. (2017), contributes to ineffective teaching of financial accounting which results to poor learning outcomes on the part of the students. Owing to very low utilization of CAI facilities by teachers and students, quality is not assured of financial accounting products in secondary schools in Nigeria. Hence, the urgent need to reset policy priorities of the secondary school management and government in general to achieve proper utilization of Computer Assisted Instruction for effective teaching and learning of financial accounting in senior secondary schools.

CONCLUSION

This study aimed at assessing the usage of Computer Assisted Instruction (CAI) for effective teaching and learning of financial accounting in senior secondary schools in Benue state, Nigeria. Specifically, the study examined the extent to which; CAI facilities are available for use by financial accounting teachers, financial accounting use CAI in teaching, CAI facilities are available for use by financial accounting students and financial accounting students use CAI in learning. The findings of the study revealed a very low extent of utilization of CAI in teaching and learning of financial accounting in the schools. The utilization of Computer Assisted Instruction for effective teaching and learning of financial accounting in senior secondary schools in Nigeria is seemingly helpful in addressing issues of adoption of innovative technology-pedagogy integration, and to further improve the quality of instructional delivery of programs by financial accounting teachers.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations have been made: the federal government, private employers of accounting graduates, such as banks, oil companies and multinational organizations must be enjoined to massively support secondary schools in Nigeria with the kind of ICT facilities/equipment currently in use in contemporary organizations so as to provide experiential knowledge and develop ICT skills in the students. Furthermore, the State Ministry of Education should collaborate with Secondary School Management Board to organize regular training for both the teachers and students of accounting on the use of Computer Assisted Instructions in order to facilitate teaching and learning. For enhanced pedagogical capabilities in the usage of Computer Assisted Instruction (CAI) Component of ICT, there is urgent need for financial accounting teachers to close the identified ICT-skills gaps through personal efforts, as well as institutional sponsorship to acquire further certificates/degrees in related computer packages/ICT courses.

For financial accounting teachers to improve their professional competence, enhance their career progression, keep abreast of new technologies and best practices, the federal government of Nigeria should enact a bill that would enforce all financial accounting teachers in Nigerian secondary schools to undergo and complete a minimum of 60 hours of documented related professional in related organizations, institutions and establishments as required in advanced countries of the world. It is no longer news that electricity supply to power the integration of new technologies is not available. Similarly, the problem of infrastructural decay has been documented. This is the time for government to address these problems for the desired result. In the same vein, the barriers that militate against the integration of CAI in teaching financial accounting should be addressed with a view to removing them.

Finally, the researchers suggest replication of this study in other parts of the world as well as in other subjects

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