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ASSESSING THE IMPLEMENTATION OF COMPUTER STUDIES CURRICULUM AT THE UPPER BASIC EDUCATION LEVEL IN AFIJIO AND OGO-OLUWA LOCAL GOVERNMENT AREAS, OYO STATE

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Abstract
Computer science has been a discipline for some years, and its position in the school curriculum has been contested differently in several countries. The inclusion of computer studies education at the upper basic level in Nigeria is to equip students with the knowledge of entrepreneurial skills, however, studies have shown that students who graduated at this level appear not to be equipped with this skill. This study, therefore, evaluates the implementation of the computer studies curriculum at the upper basic level of education in Oyo state. Six research questions were formulated based on the comprehensiveness and adequacy of the curriculum, availability of computer/ICT facilities with required facilities: qualified and proficient teachers for effective teaching and learning. A total of thirty (30) Vice-Principals, thirty (30) teachers and four hundred and eleven (411) students were selected as samples for the study. Data were collected through a self-structured questionnaire titled Evaluation of Computer Studies Questionnaire (ECSQ) and an achievement test titled Computer Studies Achievement Test (CSAT). The data collected were analysed using a frequency table, mean and standard deviation. Findings of the study showed that most of the schools in Afijio and Ogo-Oluwa Local government areas teach computer studies at the upper basic education level and that the contents of the curriculum were very appropriate to achieve the intended objectives, however, the number of computers available were grossly inadequate for the population of students in the schools covered. It was recommended that Oyo State government and other NGOs should help to organize workshops and re-training of the computer studies teachers in areas like programming, Microsoft Excel, Microsoft Access and graphic packages in order to to produce the right workforce for the 21st century.

Keywords: Evaluation, Implementation, Curriculum, Computer Studies, Upper Basic, School

Introduction
Advancements in technology have transformed every aspect of human life. Recognizing the impact of the new technology in the workplace, educational sector and everyday life, governments of developed and developing nations are compelled to reassess and restructure their educational curricula to equip their youths with the required skills to fit into this technology-driven society. It is in recognition of this that the Nigerian government sought to introduce computer studies at all levels of its educational system. Computer education was first introduced into the nation's secondary school system in 1987 based on the recommendation of the National Council on Education, which led to the formation of National Committee on Education to plan for a dynamic policy on computer education and literacy in Nigeria (Oladimeji *et al.*, 2018). The National Computer Policy was formulated as far back

as 1988, with the general objectives to bring about a computer-literate society in Nigeria by the mid-1990s and enable secondary school students to appreciate and use the computer in various aspects of life and future employment (Israel & Israel, 2019). However, this project did not take off (Oladimeji *et al.*, 2018) then immediately after personal computers were delivered and deployed (Ejiroghene, 2021).
Computer studies has been introduced as a core compulsory subject at the primary and junior school level in 2004 with the signing of the Universal Basic Education (UBE) bill into law, following its passage by the National Assembly (Igbokwe, 2015). This policy has been replaced with the National Policy on Information and Communication Technologies in Education in 2019 (FRN, 2019). The inclusion of the study of computer studies in the UBE school curriculum was aimed at producing an opportunity for every student to be computer literate. UBE is a 9-year educational programme of three years duration for lower, three years for middle basic and three years for upper basic segments (Arop *et al.*, 2018;). According to the Universal Basic Education Commission (UBEC, 2022) learners under the 9-year basic education are expected to acquire basic computer skills such as the use of a keyboard, mouse and operating systems, use the computer to facilitate learning electronically and develop a responsible level of competence in ICT applications that will engender entrepreneurial skills.

The Nigeria Educational Research and Development Council (NERDC, 2020) was mandated to develop the national computer studies curriculum at the basic education level. According to Obi and Ozofor (2020), the NERDC e-Curriculum portal contained the content of the JSS curriculum in computer studies includes the historical development of computers, Data processing, and Computer Ethics, Basic knowledge of IT, Application of IT in everyday life and Information transmission. At JSS 2 level, students are expected to learn computer software, operating systems, and units of storage in a computer, computer problem-solving skills, basic programming, computer ethics and safety measures. Computer application packages, paint environment, basic knowledge of it, transformational tool, IT gadgets, internet, and internet environment. Lastly, at JSS3, students are taught computer viruses, the internet and digital divide, computer application packages, database, spreadsheet packages, worksheets, and graphics. Additionally, the upper basic computer studies curriculum's explanatory note underlines that, for the computer studies curriculum to be implemented effectively, it is important that there must be an enabling environment created for computer studies in all the schools; computers must be available in all the schools for maximum utilization; training and retraining of teachers on how to integrate IT into pedagogy; adequate functional laboratory is required and modern teaching approach (MTA) to be used by teachers (FRN, 2019, NERDC, 2020). In addition, the restructured computer studies curriculum is expected to be taught to the students to help them acquire basic knowledge, apply technological skills to meet societal needs, gain future employment and to meet up with the aims and objectives of introducing computer studies into school curriculum (Ejiroghene, 2021). Basic schools are compelled to use this curriculum to provide students with computer literacy skills that will allow them to thrive in their learning through online sources and succeed in the ever-increasing technological workplace (Obi & Ozofor, 2020).

However, the achievement of any educational policy depends greatly on its implementation. Therefore, the process of curriculum development is never complete until it is implemented (Korte *et al.*, 2022). The importance of a curriculum can only be appreciated when it is implemented successfully. The term curriculum implementation has been defined in different ways by different scholars. Erstad and Voogt

(2018) defined curriculum implementation as the process of putting all that has been planned as a curriculum document into practice in the classroom through the combined effort of the teachers, learners, school administrators and parents as well as interaction with physical facilities, instructional materials, psychological and social environment. Similarly, Kantoma (2015) described curriculum implementation as committing the planned curriculum into action. Moobola and Mulenga (2020) also confirmed that curriculum implementation entails the teacher's understanding and interpretation of the curriculum into what is taught to the learners in the classroom. The successful implementation of the computer studies curriculum requires the availability of teaching-learning resources, which include computers, furniture, internet connectivity, books, software, steady power supply and others (Kazhila, 2020). It also requires teachers that are competent in basic computer operation, the use of simple application programs and teaching methodology. The support of the school management in terms of personal managerial support, finances, human resources, materials, and time also contributes to the success of any implementation process. Researches (Isaac *et al.*, 2018, Arop *et al.*, 2018; Oladimeji, *et al.*, 2018; Israel & Israel, 2019) have shown a wide disparity between the intended curriculum and the implemented curriculum. Korte *et al.*, (2022) observed that in some instances, what is presented to the students and how is presented in schools is different from what is contained in the curriculum. It is generally believed that how the content of instructions is passed on to the learner within a time frame has a significant influence on students' academic performance. Evaluation of curriculum, both in terms of design and implementation, informs society of what it hopes to achieve in the next years (Adedokun-Shittu *et al.*, 2018). Evaluation is an essential component of any educational programme. Evaluation entails making decisions regarding the nature and desirability of any changes that have been exhibited in addition to the process of figuring out what the actual educational outcomes are and comparing them to the projected objectives. Erstad and Voogt (2018) opined that curriculum evaluation aims at identifying its weakness and strength as well as problems encountered in implementation, to improve the curriculum development process and to determine the effectiveness of the curriculum. Studies evaluating curriculum implementation in various disciplines can be approached from the content, instructional material, methodology, infrastructure and teachers' perspective. In curriculum evaluation studies, evaluation models are largely used to define and organize the research questions, hypotheses and data collection methods. This study adopts the CIPP evaluation model for curriculum evaluation. It consists of four components: C- Context, I- Input, P- Process and P- Product. This which was introduced by Stufflebeam in 1983 (Stufflebeam, 2003). Context refers to the aims, goals and objectives of the curriculum, while inputs allude to the materials, time and human and physical resources required for the effective implementation of the curriculum. All teaching and learning methodologies and methods of assessment are considered as part of the process and the quality of teaching and learning, as well as its applicability potential for societal benefits are the product (Stufflebeam, 2003).

Studies of Ubulom *et al.*, (2016) have revealed that many junior secondary school graduates in Nigeria lack the necessary computer system operation abilities despite the implementation of the computer studies curriculum at the upper basic education levels. Many secondary school leavers sitting for the Joint Admission Matriculation Board (JAMB) examination are unable to scroll, utilize the mouse or keyboard to select their answers, left-click, and delete when they make a mistake, or find specific keys on the keyboard. Findings from these studies (Lawal, 2014; Suleiman *et al.*, 2015; Bamidele & Bakare, 2015; Isaac *et al.*, 2018) attribute this to many factors, some of which

are the complexity of the curriculum content, lack of instructional materials, poor methodology, lack of computers, incompetent teachers and lack of finance. In a study examining the problems and prospects of including computer science education in the UBE curriculum in Nigeria, Lawal (2014) opined that inculcating it into the curriculum will help produce computer literate graduates for the 21st-century workplace but observed that the attainment of this is marred by problems like poor implementation strategy, inadequate computer science teacher, inadequate supply of electricity and lack of computer laboratories. Similarly, Suleiman *et al.,* (2015) identified poor academic environment and inadequate textbooks as some of the factors militating against the successful implementation of computer studies in the 9-year Universal Education Programme in Nigeria. They also observed that the contents of the curriculum are too complex and wide for the upper basic education students, hence it needs to be modified to enhance effective teaching and learning. Adedokun-Shittu *et al.,* (2018) seem to have a different view. They believe that the present curriculum fails to satisfy the demands of teaching computer science in schools globally and suggested a review of the curriculum. The authors then proposed an innovative curriculum that is activity-based, learner-centred and contextualized. Ugwu and Onah (2020) noted that computer teachers should be competent in planning, implementing, and evaluating computer instruction. They should be able to use the keyboard and mouse for basic computer operations. They also stressed the need for a proper implementation programme of computer education curriculum in Nigerian secondary schools.

In a study investigating the level of integration of computer education by teachers in the junior secondary in Nigeria, Eze and Akubugwo (2016) observed that the UBE computer studies curriculum is adequate to achieve the objective of its introduction. They, however, stated the objectives are far from being achieved as a result of lack of computer/ICT laboratory and incompetent teachers that resulted to poor teaching and learning method. Furthermore, the study revealed the availability of the curriculum in schools, established that computer teachers were more proficient in word processing applications, teachers do not teach computer problem-solving and graphic packages and also revealed that the time allocated for the teaching of computer studies on the timetable was grossly inadequate. In his paper titled factors influencing computer education curriculum implementation in Nigerian Junior Secondary schools, Onifade (2018) observed a significant improvement in the implementation of computer education curriculum in Osun State. Findings from the study revealed that all of the teachers in the schools sampled were qualified to teach computer studies, with 80.3% of them having a degree and 19.7% of them being National Certificate in Education (NCE) holders. However, it was also reported that 71.2% of them are not registered with the Teachers Registration Council of Nigeria (TRCN), which means that only 28.8% of them are registered, teachers. The study also reports that most schools had only one computer teacher for all upper basic classes. Bamidele and Bakare (2015) investigated impediments to the implementation of computer science education curriculum in public secondary schools in Osun State. The study showed that despite the availability of qualified computer science teachers, the extent of computer science education implementation in the state was very low. In another study, Ubulom *et al.,* (2016) identified overcrowded classes, lack of incentive from the government and finance to maintain the laboratory.

Many of the researches done on computer studies implementation in Nigeria focused on impeding factors on the implementation of computer studies curriculum, teachers' competence needed for effective teaching of computer studies, the prospects of computer

studies and review of the computer studies curriculum. However, none of the studies analysed the appropriateness of the curriculum to achieve the intended objective, the extent of implementation of the curriculum, adequacy of the teaching resources, teachers' proficiency and students' achievements. This study therefore intends to assess the implementation of the computer studies curriculum at the upper basic education level in Afijio and Ogo-Oluwa local governments in Oyo State.

Statement of the Problem

Though it has been many years since computer studies was introduced in the nation's educational curriculum at the basic education level, many basic school leavers, especially at the upper basic level still lack the skills to operate basic computer gadgets and its applications. Evidence from Obi and Ozofor (2020) shows a very poor performance of students in computer studies in Enugu State Basic Education Certificate Examination (BECE). The has become a source of concern to educationists and governments at all levels. Attempts have been made by researchers to assess the implementation of computer studies curriculum in Nigeria at the basic education level. Findings from these studies show poor implementation of computer studies curriculum at the upper basic education level. However, many of these studies focused on factors impeding the implementation of computer studies curriculum, teachers' competence needed for effective teaching of computer studies, the prospects of computer studies and review of the computer studies curriculum. Literature shows lack of studies analysing the appropriateness of the curriculum to achieve the intended objective, the extent of implementation of the curriculum, adequacy of the teaching resources, teachers' proficiency and students' achievement. It is the intent of this study to provide information to cover this identified gap. This study assessed the implementation of the computer studies curriculum at the upper basic education level in Afijio and Ogo-Oluwa local governments in Oyo State.

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Research Objectives

The objectives of the study are to:

1. Determine the appropriateness of the upper basic computer/ICT curriculum to achieve the intended objectives of teaching and learning computer studies.
2. Determine the extent to which the objectives of the computer studies curriculum are achieved in upper basic schools in the two local government areas in Oyo State.
3. Ascertain the adequacy of the hardware and software in the computer laboratories for the effective teaching of computer studies at the upper basic schools in two local government areas in Oyo State.
4. Determine the extent to which the teachers are proficient to teach computer studies at the upper basic schools in two local government areas in Oyo State.
5. Ascertain the modes of evaluation used by teachers of computer studies in upper basic schools in two local government areas in Oyo State adopt in evaluating learning outcomes.
6. Determine the performance of students in computer studies at Upper basic in the two local government areas in Oyo State.

Research Questions

The study sought answers to the following:

1. How appropriate is the upper basic computer/ICT curriculum to achieve the intended objectives of teaching and learning computer studies?
2. To what extent are objectives of the computer studies curriculum achieved in upper basic schools in two local government areas in Oyo State?
3. How adequate are the hardware and software in the computer laboratories for the effective teaching of computer studies at the upper basic schools in two local government areas in Oyo State?

4. To what extent are the teachers proficient to teach computer studies at the upper basic schools in the two local government areas in Oyo State?
5. What modes of evaluation do teachers of computer studies in upper basic schools in two local government areas in Oyo State adopt in evaluating learning outcomes?
6. How do students at Upper basic schools perform in computer studies in the two local government areas in Oyo State?

Research Methodology

The research design adopted for this study was a mixed method of descriptive survey and achievement test. This was considered appropriate by the researcher to give a systematic description of the evaluation of the implementation of computer studies curriculum in upper basic schools. The population of the study consisted of all vice principals, teachers and students at the Upper Basic Schools in Oyo State, restricted to Afijio/Ogo-Oluwa Local Government Areas. The sample size for the study comprised thirty (30) Vice- principals, thirty (30) teachers and four hundred and eleven (411) students from JSS II and JSS III from thirty (30) public junior secondary schools in Afijio and Ogo-Oluwa Local Government Areas of Oyo State. The 30 Vice principals were purposively selected to include all members of the population due to their small size. The simple random sampling technique was adopted to obtain the sample size of 30 teachers and 411 students. The instruments for data collection for this study were a self-structured questionnaire titled Evaluation of Computer Studies Questionnaire (ECSQ) for vice-principals and teachers and an achievement test titled Computer Studies Basic Concepts Tests (CSAT) administered to students. The questionnaire was organized into two sections namely Section A and B. Section A of the questionnaire generated demographic information while Section B consist of questions items addressing the research questions using the four-point modified Likert rating scale response pattern of a Very high level of proficiency = 4, High level of proficiency = 3 points, Low Level of Proficiency = 2 points, and Very Low Level of Proficiency = 1 point, for teachers' level of proficiency; Very High Extent (VHE) = 4 points, High Extent (HE) = 3 points, Low Extent (LE) = 2 points, and Very Low Extent (VLE) = 1 and Likert rating scale of strongly agree (SA), agree (A), disagree (D) and strongly disagree (SD) which represented 4, 3, 2, 1.

The Computer Studies Achievement Tests (CSAT) consists of sixty multiple-choice objective test items. Each test is followed by five –answer options (A- E) from which students are expected to select the correct alternative. The research instruments were subjected to face and content validity while Cronbach's Alpha method was used in determining the reliability of the instrument and yielded a reliability co-efficient index of r = 0.82 and 0.78 respectively. All the 30 Vice-principals and 30 computer studies teachers were administered the questionnaire in their respective schools after permission was granted by the various authorities of the schools. The entire respondents were informed about the date and time of the exercise in advance. A total of 2 weeks was used to cover all the schools where the respondents were selected. Data collected were analysed with frequency table, mean and standard deviation using Statistical Package for Social Scientists (SPSS) version 28. Items with a mean score of 2.50 and above were considered high while a mean score of 2.49 and below were considered low.

Results

Table 1: Appropriateness of the Upper Basic Computer Studies Curriculum in achieving the intended objectives of teaching and learning computer studies

SN	Statements	Mean	SD	Decision
1	The contents of the curriculum are very appropriate to achieve the intended objectives of the curriculum	3.10	.951	Agreed
2	The computer studies curriculum is designed to equip	3.15	.732	Agreed

	upper basic school leavers with the right skills needed for senior secondary school and life after school			
3	The computer studies curriculum is designed to facilitate learning electronically	3.40	.669	Agreed
4	The contents of the curriculum are very appropriate to acquire basic skills such as the use of a keyboard, mouse and operating system	3.30	.788	Agreed
5	The computer studies curriculum is designed to develop a reasonable level of competence in ICT applications that will engender entrepreneurial skills	3.25	.895	Agreed
	Cumulative Mean	**3.24**		**Agreed**

Table 1 presents the mean values of items 1-5 range from 3.10 to 3.40, with standard deviation values ranging from 0.669 to 0.951. The cumulative mean value of 3.24 is above the decision rule mean of 2.50. This means that all the respondents accepted the appropriateness of the upper basic computer studies curriculum in achieving the intended objectives of teaching and learning computer studies.

Table 2: Extent of Achievement of the Objectives of Computer Studies at the Upper Basic Education level.

SN	Statements	Mean	SD	Decision
1	Students can boot the computer system	2.50	1.14	High Extent
2	Students can copy a file from one storage location to another	1.63	0.89	Low Extent
3	Students can use MS word conveniently	2.50	1.11	High Extent
4	Students can enter data into a worksheet	1.70	0.99	Low Extent
5	Students can perform calculations using MS Excel	1.63	0.89	Low Extent
6	Students can create a chart in MS Excel	1.57	0.89	Low Extent
7	Students can create a database using MS Access	1.00	0.00	Low Extent
8	Students can run a query in MS Access	1.00	0.00	Low Extent
9	Students can search for information on the internet	2.47	0.94	Low Extent
10	Students can send mail using any Email application	2.50	0.99	High Extent
11	Students can run an antivirus on their systems	1.10	0.40	Low Extent
12	Students can write a simple Basic program	1.03	0.18	Low Extent
13	Students can open an email using applications such as Gmail, yahoo mail	2.50	0.94	High Extent
14	Students can post messages to the internet (e.g blogs, Facebook, Twitter and so on)	2.80	1.16	High Extent
	Cummulative Mean	**1.85**	**0.83**	**Low Extent**

Table 2 showed the mean values of items 1, 3, 13 and 14 are 2.50, 2.50, 2.50 and 2.80, which indicate that computer studies teachers at the upper basic education level believe that some objectives of the upper basic education computer studies curriculum have been achieved to some extent. The teachers revealed that the students can boot the computer system, use Microsoft Word conveniently, open use email applications like Gmail and post messages to the Internet which are basic operations only. However, the mean scores for items 2, 4, 5, 6, 7, 8, 9, 10, 11 and 12 are less than 2.50 This means that the majority of the objectives have not been achieved. The cumulative mean of 1.82 also indicate that the extent of achievement is low. The teachers stated that the students cannot copy files from one storage location to another, use Microsoft Excel, use Microsoft Access, run an antivirus and write a simple basic program.

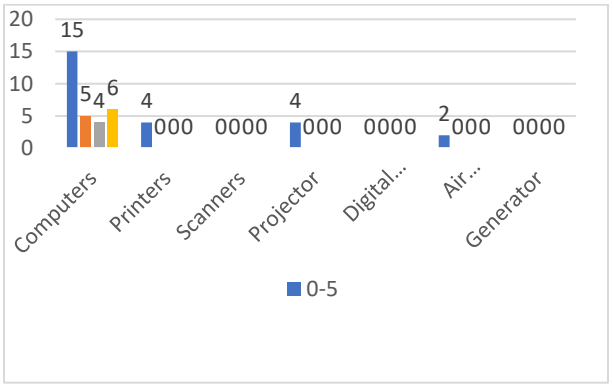


Figure 1: Adequacy of adequacy of the hardware in Computer Laboratories for Effective Teaching of computer Studies at the Upper Basic Education Level

Figure 1 showed that most of the respondents affirmed that their computer laboratories are not adequate for the effective teaching of computer studies at the basic education level. It was observed that respondents from 15 schools said that they have between 0-5 computers, 5 said they had 6-19 computers, 4 said they had 20-29 computers and 6 said they have above 29 computers in their laboratories. It was also observed that only 4 schools had printers and projectors, while only 2 had an

air-conditioner in their laboratories. Results from the chart also showed that none of the schools had scanners, digital cameras, and generators.

Table 3: Adequacy of Software Installed in the Computer Laboratories

S/N	Software	Installed	Not Installed
1	Microsoft Word	70%	30%
2	Microsoft Excel	60%	40%
3	Microsoft Access	40%	60%
4	Corel Draw	20%	80%
5	Paint	15%	85%
6	Basic Programming Language	10%	90%
7	Google Chrome	70%	30%
8	Anti-Virus	45%	55%
9	Microsoft Edge	70%	30%

From Table 3, it was observed that 70% of the respondents said they had Microsoft Word, Microsoft Edge and Google Chrome installed on their computers. Similarly, 60% of them said they have Microsoft Excel installed, while 45% said they have anti-virus installed and 40% said they have Microsoft Access installed. However, only 20% of the schools have CorelDraw, 15% have paint installed and 10% have the BASIC interpreter installed.

Table 4: Teachers' Proficiency Level

SN	Statements	MEAN	SD	Decision
1	Software Installation	2.20	1.19	Low Proficiency
2	Computer Operation (File management, storage management)	3.20	0.76	High Proficiency
3	Windows Operating System	3.43	0.82	High Proficiency
4	Microsoft Excel	2.20	0.99	Low Proficiency
5	Microsoft Word	3.83	0.53	Very High Proficiency
6	Database Microsoft Access	1.07	0.25	Low Proficiency
7	Microsoft PowerPoint	1.90	1.03	Low Proficiency
8	Microsoft Publisher	1.50	0.68	Low Proficiency
9	Antivirus Installation and use	2.13	1.07	Low Proficiency
10	Basic Programming	1.53	0.82	Low Proficiency
11	Internet applications	3.20	0.76	High Proficiency
12	Paint	1.53	0.73	Low Proficiency
13	CorelDraw	1.87	0.94	Low Proficiency
	Cumulative Mean	**2.28**	**0.81**	**Low Proficiency**

Table 4 indicates a high level of teachers' proficiency in computer operations, windows operating system, Microsoft Word and Internet applications with mean values of 3.20, 3.43, 3.83, and 3.20 respectively. However, the cumulative mean value of 2.28 generally shows a low proficiency in most applications such as Software Installation, Microsoft Excel, Microsoft PowerPoint, Anti-virus installation, CorelDraw, Paint, Microsoft Access and Basic programming language.

Table 5: Modes of Evaluation

SN	Method of Evaluation	Frequency
1	Objective Questions only	0 (0%)
2	Essay Questions only	0 (0%)
3	Objective and Essay Questions	15 (50%)
4	Project Method	15 (50%)

Table 5 showed that 50% of the respondents said they evaluated their students using objectives and essay questions. Similarly, 50% of the respondents used the project method to evaluate their students.

Table 6: Summary of CSAT for Students

SN	Grade	F	%	Decision
1	A	14	3.41	Pass
2	B	41	9.98	Pass
3	C	82	20	Pass
4	D	68	16.6	Pass
5	E	130	31.6	Fail
6	F	76	18.5	Fail
	Total	**411**	**100**	

Table 6 presents the summary of achievement test administered to students to determine their performance with the current computer studies curriculum. It shows that 3.41% of the students had A, 9.98% had a B grade, 20% C grade, 16.6% D grade, 31.6% E grade and 18.5% with F grade. Generally, about 66.7% of the students scored less than 50% in the achievement test administered.

Discussion

Data collected from demographic information of respondents (Vice-Principals & Computer Studies Teachers) shows that 20% of the teachers and vice-principals used for the study were NCE holders, 75% hold a first degree and 05% also held a master's degree. This revealed that all teachers

possessed the minimum qualification to teach at the upper basic education level. Majority of the teachers (90%) were registered with the Teachers Registration Council of Nigeria (TRCN), while only 10% of them were not registered. A good number of the respondents were experienced teachers, 30% of them had spent between 5 to 10 years in service, 50% had spent between 11 and 20 years and 20% had spent more than 20 years in the teaching service. The teachers also reported that most of the them had not received any form of ICT re-training. The study involved more female than male respondents. 35% of the teachers were male while 65% were female. Similarly, 30.2% of the students were male, while 69.8% were female. Majority of the students were in JSS 3 with 59.9%, while 40.1% were in JSS 2. Furthermore, the schools in the study area offered computer studies as a subject at the upper basic education level and have a computer studies curriculum. 60% of the schools do not have a computer laboratory, only 5% had an engineer assigned to their laboratories for maintenance and none of the schools receive imprest in running the computer laboratory. This is in line with studies of Onyeneho and Ekwue (2012).

On the appropriateness of the upper computer studies curriculum to achieve the intended objectives of teaching and learning computer studies at the upper basic education level, findings in Table 1 showed that the contents of the curriculum are very appropriate to achieve the intended objectives. The curriculum is appropriate to equip the students with basic skills and develop a reasonable level of competence in ICT applications that will engender entrepreneurship skills. This finding contradicts that of Adepoju and Alhasaan (2015) that observed that the content of the curriculum was too complex and wide for the upper basic education students. The findings, however, agree with that of Eze and Akubugwo (2016) that the UBE computer studies curriculum was adequate to achieve the objectives of its introduction.

Findings from Table 2 revealed that some objectives of the computer studies curriculum at the upper basic education level can be said to be achieved to a great extent. It showed that the students can boot the computer system, use Microsoft Word conveniently, open use email applications like Gmail and post messages to the Internet. However, the study further revealed that most of the students cannot copy files from one storage location to another, use Microsoft Excel, use Microsoft Access, run an antivirus and write a simple basic program. Similarly, Eze and Akubugwo (2016) also found that the objectives of computer studies of teaching computer studies at the basic education level were far from being achieved. Results from Figure 1 and Table 3 indicate the adequacy of the hardware and software in the computer laboratories for the effective teaching of computer studies at the upper basic schools in two local government areas in Oyo State. The study found that 40% of the schools affirmed that they have a computer studies laboratory. However, it was observed that the number of computers available in these laboratories was grossly inadequate for the population of students in the schools. Most of the respondents affirmed that their laboratories were inadequate for effective teaching of computer studies at the basic education level. Figure 1 revealed that other hardware devices such as projectors, scanners and printers required to teach, were not adequate and only two of the laboratories had an air conditioner installed. The computer laboratories were not adequately maintained since there were no computer engineers or technicians assigned to maintain the computer systems. This corroborates the findings of Isaac *et al.,* (2018). Similarly, only 20% of teachers said that computers in the laboratory are connected to the internet, schools were not provided with imprest to run the laboratories and schools do not have an alternative source of power supply. This means that when there is an interruption in power supply, students would not be able to use the laboratories. Table 3 showed that most of the computers in the laboratories have most of the software

specified in the curriculum installed, 60% of them stated that they have Microsoft word, Microsoft Excel, Google Chrome and Microsoft Edge installed, while only 10% of them have basic programming language installed. This means that most of the students lack programming skills, a very important skill sought required for employment in the 21st century.

Findings in Table 4 revealed a high level of teachers' proficiency in computer operations, windows operating system, and Microsoft Word and Internet applications. However, the cumulative mean of 2.28 indicate a low proficiency level. Teachers have low proficiency level in most applications such as Software Installation, Microsoft Excel, Microsoft PowerPoint, Anti-virus installation, CorelDraw, Paint, Microsoft Access and Basic programming language. This agrees with Onyenecho and Ekwue (2012) that teachers were more proficient in word processing applications and do not teach computer problem-solving and graphic packages. The implication of this is that teachers need to be trained and retrained to acquire the necessary knowledge and skills to be proficient enough to teach their students. Ugwu and Onah (2020) noted that lack of competence of teachers in the required skills will affect the intended purpose of the curriculum.

The results presented in Table 5 showed that teachers evaluate their students using project and a combination of objective and essay methods. These methods are adequate for proper assessment of student's achievement in computer studies. Adedokun-Shittu *et al.,* (2018) alluded to the fact that a good evaluation of curriculum is required to for it to achieve its intended purpose. On students' performance, Table 6 showed that 66.7% of the students scored less than 50% in the achievement test administered. This supports studies of Ubulom *et al.,* (2016) and Obi and Ozofor (2020) which also revealed a very poor performance of students in computer studies in Rivers and Enugu State Basic Education Certificate Examination (BECE) respectively.

Conclusion

Based on the findings of this study, it was concluded that computer studies are taught at the upper basic education level in most secondary schools in Afijio and Ogo-Oluwa Local Government Areas in Oyo State. The curriculum is very appropriate in achieving the intended objectives of equipping the students with the basic skills and developing a reasonable level of competence in ICT applications that will engender entrepreneurship skills. However, there is a need to include programming languages like Scratch to develop students' problem-solving skills. From the result of the achievement test, it can also be concluded that the objectives of the computer studies curriculum at the upper basic education level are far from being achieved and the need for the state government to take the teaching of computer studies very seriously. Similarly, schools lacked the required infrastructure to teach computer studies. The laboratories are inadequate and are not effectively managed. Schools lack funds and manpower to maintain the laboratories. It was also observed that other software and hardware devices such as projectors, scanners and printers required to teach are not adequate.

Recommendations

The following recommendations are made:

1. Oyo State government and other NGOs should help to organize workshops and re-training of the computer studies teachers in areas like programming, Microsoft Excel, Microsoft Access and graphic packages.
2. There is a need for the federal and state governments to revise the curriculum to include programming languages like Scratch to expose students to problem-solving skills.
3. The school administrators should make available important computer studies books in the school library for teachers and students to use.

4. Oyo State government should employ computer engineers or technicians to maintain the computers in the laboratory in secondary schools.
5. Oyo State government and school administrators should make funds available for the running of the computer studies laboratory.
6. Oyo State government should provide to the secondary schools more hardware and software required by the curriculum for effective teaching of computer studies.

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