APPRAISAL OF THE IMPLEMENTATION OF COMPUTER STUDIES CURRICULUM IN UPPER BASIC EDUCATION SCHOOLS IN ANAMBRA STATE

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Abstract
The Study appraised the implementation of Computer Studies Curriculum in Anambra State. Descriptive survey research design was used for the study. The population of this study comprised 310 computer/ICT teachers and 5753 UBE2 students. The sample size for the study comprised 34 Computer Studies teachers and 574 UBE students obtained through multi-stage sampling procedure.
Data were collected using 'Adequacy of Teachers for the Implementation of Computer Studies Checklist (ADTICSC), questionnaire on 'Computer Studies Teachers' Qualification Questionnaire' (CSTQQ)' and Classroom Observation Schedule (COS). The instrument was validated by three experts its reliability was established using Kuder-Richardson-20 formular. Coefficient values of 0.86 and 0.80 were obtained2 which was considered high enough to confirm the instrument as reliable. Data were analyzed using frequency counts, percentages and means. The findings revealed that majority of the sampled schools do not have adequate Computer Studies teachers for the implementation of Computer Studies curriculum. The finding of the study also revealed Computer Studies teachers are qualified for the implementation of Computer Studies curriculum and that lecture method was the most utilized teaching method for the implementation of Computer Studies curriculum and that computer studies teachers are adequate. It was concluded that implementation of Computer Studies Curriculum in Upper Basic Education schools is done to a low extent. It was recommended among others that government should provide the schools with adequate computer studies teacher for effective implementation of the computer studies curriculum.

Keywords: curriculum, curriculum implementation, computer studies

Introduction

Computer studies is a school subject in which the individual is taken through the rudiments of using the computer to store and process data or information accurately and efficiently. The process seeks to equip the individual with the skills and knowledge that can make them use the computer effectively. Ehondor and Omoruyi (2013) defined Computer studies as the learning that can lead to computer literacy; this implies that the aim of learning and teaching of computer studies is to make individual develop the knowledge and skills of computer application or use.
Computer studies in Nigeria is of paramount importance to the nation's development that is why the National Committee on Computer Studies in Nigeria was introduced in 1987 with the objective of bringing a computer literate society in Nigeria by mid -1990s and enabling present school child to appreciate the use of the computer in various aspects of life and in future employment (Olabamiji, 2018). The need to integrate the use of ICT in Nigerian schools has elicited the inclusion of computer

studies in all sectors of education from primary to tertiary education. Computer studies which was introduced into the school curriculum is now a pre-vocational elective at the junior secondary schools (JSS) level and a vocational elective at the senior secondary school (SSS) level. Computer studies was introduced into secondary schools in Nigeria in order to meet up with the emerging technological challenges facing Nigeria in the 21st century and beyond (National Educational Research and Development Council (NERDC, 2014). However, Curriculum for all upper basic education was launched by the Federal Government of Nigeria in 2011 and is aimed at producing secondary school graduates who are well prepared for higher education as well as having relevant functional trade and entrepreneurship skills needed for poverty eradication, job crea2tion and wealth generation (Osadebe and Ojukonsin, 2018). Every country of the world develops instructional curriculum 2and programme in an effort to make education systematic, organised and effective in meeting the goals of education (Nweke, 2014). A curriculum depicts the entire goals and objectives of an educational programme as well as how these goals and objectives can be achieved. Obialor (2022) defined curriculum as the entire teaching and learning activities of the school which aims at giving the children complete and purposeful education. The impact of the school curriculum is so crucial for national and state policies that in most countries of the world especially Nigeria, this responsibility is shouldered by various levels of government and national level organizations and agencies. However, the process of curriculum making or development is never complete until it gets to implementation. Therefore, the worth of a curriculum can only be appreciated when it is implemented (Adefunke, Ayodele and Olufemi, 2014). The implementation of curriculum is vital.

Curriculum implementation is key to the achievement of the aims and objectives of the planned curriculum for the learners' continuous growth. According to Shehu (2020), it is the act of delineating the curriculum contents to the learners for the purposes of achieving the goals and objectives of the curriculum. Curriculum implementation is the process by which the curriculum planned or documented is put into action by the teacher particularly in the classroom setting (Obialor, 2022). Curriculum implementation encompasses different components, including the delivery of the curriculum through resources and instructional practices (Erica, 2018). It is with the curriculum that educators ascertain the contents, plan classroom instruction, device instructional materials and select recommended teaching methodologies with which to translate the objectives of the lesson to the understanding of students. Moreover, the explanatory note in the upper basic curriculum of computer studies emphasizes that, for effective implementation of computer studies curriculum, there must be 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 as well as modern teaching approach (MTA) to be used by teachers (NERDC, 2014). In addition, computer studies curriculum was later restructured in 2012 and introduced in Anambra State. Sequel to the restructure, it is expected that the curriculum would 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 (Taiwo, Taiwo and Adeniyi, 2014). The curriculum implementation process takes

cognizance of the teachers' qualification, teachers' methodologies and adequacy of instructional resources among others

Teachers' professional qualification is critical to the effective implementation of the curriculum. This is because teachers are the implementers of the curriculum. Thus, a teacher who does not possess the requisite professional qualification is bound to be defective in the implementation of the contents of the planned curriculum such a teacher will lack mastery of the subject contents. More so, lack of professional teaching qualification may imply that poor m2ethodology will be employed in the class, and in which case, the criterion of methodology as determining factor in curriculum implementation would be equally affected.

The computer studies curriculum covers the methodologies that computer Studies teachers are to adopt to drive home their lessons. Zendler (2019) noted that the following teaching methodologies are recommended for curriculum implementation of computer studies viz: reciprocal teaching, computer simulation, feedback, problem solving, direct instruction, mastery learning, conceptmapping, peer tutoring, role play, portfolio, cooperative (vs. competitive) learning and interactive instructional videos. It is further structured in such a way that there are series of complementary activities expected of the teacher and students for computer Studies in upper basic education. These complementary activities include the one at the beginning of the lesson, within the lesson and at the end of the lesson. With regards to the method of teaching to be employed by the teacher, the curriculum suggests the following methods: guided discovery, demonstration, giving of examples, project method among others (Olabamiji, 2018). For effective curriculum implementation, it is expected that instructional methods would be more student-centered than teacher-centered.

The researcher curiously observed that, despite the relevance of teachers in the implementation of the curriculum, the computer literacy of upper basic education students in public secondary s8chools in Anambra State appears to be unsatisfactory in line with the global demand. Similarly, in Ondo State, Aboderin and Olukayode (2014) revealed that there is lack of trained manpower to teach computer studies, lack of computer resources, inadequate time allotted for computer lessons on time table and funding constraints. This has raised questions as to whether the computer studies curriculum is well-implemented. It is against this background that the researcher is triggered to appraise the implementation of computer studies curriculum for upper basic education in Anambra State.

Purpose of the study

The main purpose of the study was to appraise the implementation of Computer studies curriculum in upper basic education schools in Anambra State. Specifically, the study sought to find out:

1. The adequacy of computer studies teachers for effectively implementing the computer studies curriculum in upper basic education in Anambra State in line with curriculum specification
2. The qualification of teachers for implementation of computer studies curriculum in upper basic education in Anambra State in line with curriculum specification.
3. Teachers' compliance with teaching methods recommended for the implementation of Computer studies curriculum in upper basic education in Anambra State in line with curriculum specification.

Research Questions

The following research questions guided the study:

1. What is the adequacy of computer studies teachers for effectively implementing the computer studies curriculum in upper basic education in Anambra State in line with curriculum specification?
2. What qualifications do computer studies teachers possess for the effective implementation of computer studies curriculum in upper basic education in Anambra State in line with curriculum specification?
3. What are the recommended instructional methods that teachers adopt for the implementation of Computer studies curriculum in upper basic education in Anambra State in line with curriculum specification?

Methods

Descriptive survey design is used in this study. A survey design is one in which a group of people or items are studied by collecting and analyzing data from only a few people or items considered to be representative of the entire group (Nworgu, 2015). The study was carried out in Awka of Anambra State. The population of this study comprised all the computer/ICT teachers and JSS2 Computer Studies students in the 263 public secondary schools in six education zones of Anambra State namely Aguata, Awka, Onitsha, Nnewi, Ogidi and Otuocha. The sample size for the study comprised 34 Computer Studies teachers and 574 JSS 2 Computer Studies students in public secondary schools in Anambra State selected using multi-stages sampling technique. Cluster Sampling Technique was used to obtain two secondary schools from each of the six education zones to give rise to 12 schools. Cluster Sampling Technique was further used to obtain upper basic 2 classes from each of the 12 schools to give rise to the sample. For the teachers, the teachers in the sampled schools were used for the study. The instruments that were used for data collection in this study are questionnaire, checklist and observation schedule. The checklist, questionnaire and observation schedule were drafted in line with the stipulations of National Curriculum for Secondary School Computer Studies (2009). The checklist was titled ‘‘Adequacy of Teachers for the Implementation of Computer Studies Checklist (ADTICSC)’. It was structured in a way that the respondents responded using a two-point rating scale of Adequate (A) and Not Adequate (NA). The questionnaire was titled ‘Computer Studies Teachers’ Qualification Questionnaire’ (CSTQQ). It was used to obtain information on teachers’ qualification. It consisted of 13 items in which teachers were expected to indicate their educational qualifications.

Classroom Observation Schedule (COS) sought information on teachers’ level of compliance with appropriate teaching methods for Computer Studies in upper basic education and has 16 items. It was constructed in a manner that the duration of a teacher’s use of each teaching method is thus timed: 1015mins, 5-10 mins, 0-5mins and 0mins to mean Often Used (OU), Seldom Used (SU) and Not Used (NU) respectively. The instrument was validated by three experts for face and content validation. Among the validators, one is from Department of Science Education, one from Department of Educational Foundations from Nnamdi Azikiwe University Awka and a computer specialist that has

marked computer studies in (WASSCE) over the years. The reliability of the AICSCUBE was established using Kuder-Richardson-20 formular. In working out the reliability coefficient, each of the items was scored dichotomously, that is, when for each item, a mark is awarded for 'Yes' and zero for 'No'. AICSCUBE was administered to 30 respondents outside the sample area. The reliability of CSTQQ was tested using Cronbach alpha method. This was carried out by administering the CSTQQ to a similar group of 10 Computer Studies teachers from a public secondary school in Enugu State which is outside the study area. The internal consistency of the items in CSTQQ was determined using Cronbach statistics. The alpha coefficient obtained was 0.76. The reliability coefficient values of 0.86 and 0.76 was obtained respectively and were deemed reliable as they fall within the recommendation of Nworgu (2015) that an instrument is reliable and excellent when its reliability co-efficient is above 0.80 for quantitative research.

The researchers first obtained permission from principals of the sampled schools. Secondly, the researcher proceeded to familiarize herself with the Computer Studies teachers and the JSS 2 students. The researcher with the help of five research assistants who were co-postgraduate students administered the CSTQQ and ADTICSC to the respondents. The CSTQQ was administered to the Computer Studies teachers' while ADTICSC was administered to the school principles of each of the schools sampled. COS was used by the researcher alongside the research assistants to personally observe Computer Studies teachers' instructional delivery. This is to enable them ascertain the extent to which the Computer Studies teachers complied with the teaching methods for instructional delivery. Data arising from Research Questions 1, 2 and 3 were analysed using frequency counts and percentages. The cut-off point for accepting percentage score for the Research Questions 1, 2, and 3 was put at 50% with the decision rule that any weighted percentage of 50% and above was taken as Yes while percentage scores below 50% was taken as NO. For research question 2, any computer teacher with a degree in computer alongside an educational background was considered qualified. The decision rule on the questionnaire items of research questions 3 was based on item and cluster means relative to real limits of numbers as shown below:

Response	Rating Scale	Real Limit of Numbers
OU	3	2.50 – 3.00
R	2	1.50 – 2.49
N	1	1.00 – 1.49

Decisions on research questions 3 were based on the grand mean in relations to the real limits of numbers. The analysis was carried out using SPSS version 23.0.

Results

Research Question 1: What is the adequacy of computer studies teachers for effectively implementing the computer studies curriculum in upper basic education in Anambra State in line with curriculum specification?

Table 1: Frequencies and Percentages of Computer Studies Teachers Adequate for Implementation of Computer Studies Curriculum in Upper Basic Education in Anambra State (N=12)

2	Freq	%	Decision
1.Computer Studies Teachers.	4	33.33	Not adequate

Data in Table 1 shows that 4 out of 12 sampled schools have adequate teachers for the implementation of computer studies curriculum in upper basic education in Anambra State in line with curriculum specification. This shows that majority of the sampled schools do not have adequate Computer Studies teachers for the implementation of Computer Studies curriculum

Research Question 2: What qualifications do computer studies teachers possess for the effective implementation of the computer studies curriculum in upper basic education?

Table 2: Frequencies and Percentages of Computer Teachers' Requisite Qualification for Implementation of Computer Studies in Upper Basic Education (N=34).

	Freq	%	Remark
6.PhD (Computer Studies).	0	0.0	None
7.PhD (Others).	0	0.0	None
8.M.Ed. (Computer Studies)	2	5.88	Qualified
9.M.Ed. (Computer + PGDE)	5	14.71	Qualified
10.M.Ed. (Others).	1	2.94	Not Qualified
11.M.Sc. (others).	1	2.94	Not Qualified
12.B.Sc. (Ed) Computer.	6	17.65	Qualified
13.B.Sc. (Ed) others.	1	2.94	Not Qualified
14.B.Sc. (Computer + PGDE).	4	11.76	Qualified
15.NCE (Computer).	10	29.41	Qualified
16.NCE (Others).	1	2.94	Not Qualified
17.HND (Computer + PGDE).	3	8.82	Qualified
18.Others.	0	0.0	Not Qualified

Data in Table 2 shows that 30 out of 34 teachers are qualified to teach computer studies in upper basic education in Anambra State. This shows that majority of the teachers who teach computer studies in upper basic education in Anambra State possess the requisite for the implementation of Computer studies curriculum in line with the specifications of the curriculum.

Research Question 3: What are the recommended instructional methods that teachers adopt for the implementation of Computer Studies curriculum in upper basic education in Anambra State in line with curriculum specification?

Table 3: Mean Scores of Respondents on their Level of Compliance with Recommended Instructional Methods for Computer Studies in Upper Basic Education (N=34).

Instructional Methods	Mean	Remarks
1. Lecture method.	2.94	Often Used
2. Project method.	2.92	Often Used
3.Individualized method.	2.68	Often Used
4. Discussion method.	2.50	Often Used
5. Concept mapping.	2.18	Rarely Used
6. Programmed Instruction.	2.11	Rarely Used
7. Analogy.	2.48	Rarely Used
8. Role playing.	2.44	Rarely Used
9.Simulation and games.	2.54	Often Used
10. Scaffolding.	2.23	Rarely Used
11. Cooperative learning.	2.56	Often Used
12. Demonstration	2.58	Often Used

Data in Table 6 show that lecture method, project method, individualized method, discussion method, simulation and games and demonstration method are often used by Computer Studies teachers for the implementation of Computer Studies in upper basic education in Anambra State in line with curriculum specification. Additionally, while concept mapping, programmed instruction, analogy, role playing and scaffolding are rarely used by Computer Studies teachers, team teaching is never used for the implementation of Computer Studies in upper basic education in Anambra State in line with curriculum specification.

Discussion

The findings of the study showed that majority of the sampled schools do not have adequate Computer Studies teachers for the implementation of Computer Studies curriculum. In other words, there is insufficient number of Computer Studies teachers to facilitate the implementation of the Computer Studies curriculum in upper basic education. This position is corroborated by Isyaku (2016) who found that there was inadequate manpower for the implementation of Computer Science Education (CSE) The finding of the current study is however contradicted by those of Olabamiji (2018) who found that the number of Computer Studies teachers in secondary schools is adequate for curriculum implementation.

The findings of the study showed that majority of the teachers who teach computer studies in upper basic education in Anambra State possess the requisite qualification for the implementation of Computer studies2 curriculum. This is rather not surprising given the commitment of successive

government to quality education in the State. The findings of the study are in agreement with those of Olabamiji (2018) that 62.9% of Computer Studies teachers are qualified to teach the subject. This is an affirmation of the findings of current study that majority of teachers who teach Computer Studies are professionally qualified. Thus, professional qualification is vital to the implementation of Computer Studies curriculum.

The findings of the study showed that while Computer Studies teachers make use of lecture method, project method, individualized method, discussion method, simulation and games and demonstration method often for the implementation of Computer Studies, concept mapping, programmed instruction, analogy, role playing and scaffolding are rarely used by teachers for the implementation of Computer Studies in upper basic education in Anambra State in line with curriculum specification. This is rather not surprising given that teachers have become so used to the lecture method, project method, individualized method, discussion method, simulation and games and demonstration method that they find it inconvenient using other innovative teaching methods such as concept mapping, programmed instruction, analogy, role playing and scaffolding. Apparently, the use of lecture method,8 project method, individualized method, discussion method, simulation and games and demonstration method seems to have gained prominence and acceptability over other innovative teaching methods which to which modern day students who are digital natives are disposed. The findings of the study are rather in tandem with those of Isyaku (2016) that there was inappropriate use of teaching methodologies. This could be linked to the negative attitude of some Computer Studies teachers towards innovation.

Conclusion

Based on the findings of the study, it was concluded that schools do not have adequate Computer Studies teachers. It was further concluded that teaching methods are used for the implementation of Computer Studies in upper basic education in Anambra State in line with curriculum specification and that most of the computer studies teach had the required teaching qualification as specified in the curriculum.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. Government should provide the schools with adequate computer studies teacher for effective implementation of the computer studies curriculum.
2. State governments should retain their tradition of employing qualified Computer Studies teachers for the implementation of Computer Studies curriculum.
3. Ministry of Education should ensure that teachers use the recommended teaching methods for the implementation of Computer Studies curriculum.

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