Evaluation of the Implementation of Computer Studies Curriculum in Public Senior Secondary Schools in Bayelsa West Senatorial District

Dr Tupele-Ebi Enai Oyadonghan &Mr Tennyson Adevie Ibukilebu Department of Curriculum Studies Isaac Jasper Boro College of Education, Sagbama. Pmb 74, Yenagoa, Bayelsa State +2348036250231. tupele_ebi@yahoo.com DOI: 10.56201/jpaswr.v10.no4.2025.pg1.12

Abstract

The present paper is an evaluation of the implementation of computer studies curriculum in public senior secondary schools in Bayelsa West Senatorial District. This study adopted descriptive research design. This design enabled the researcher to evaluate the implementation of Computer Studies Curriculum in public senior secondary schools in Bayelsa state. The population consisted of all the Computer Studies teachers in public senior secondary schools in the two (2) LGA's of Bayelsa West Senatorial District, with a total of 36 schools. The total population of teachers in all the public schools in the area is 287 makes up of 130 male and 157 females. The research instrument used for this study was a questionnaire. The instrument was content and face validated by two experts in the department of Curriculum Studies and Instructional Technology, Faculty of Education, Ignatius Ajuru University of Education. The questionnaire was administered to a group of 98 public senior secondary school teachers in the Senatorial District, after a brief explanation of the purpose of the study to the respondents in the sampled schools. The instrument was administered to them and retrieved after their responses. The period of data collection lasted for four weeks. Data obtained for research questions was analyzed using mean and standard deviation. Data obtained from the test was used to answer the research questions using mean and standard deviation while Z-test was used in analyzing the hypotheses at 0.05 level of significance. The data analysis showed that there is no significant difference between the views of male and female teachers on the extent of implementation of objectives (context variable) of the computer studies Curriculum in public senior secondary schools in Bayelsa West Senatorial District. It also showed that there is no significant difference between the views of male and female teachers on the extent of availability and adequacy of resources (input variable) for the implementation of Computer studies curriculum in public senior secondary schools in the district.

Key Words: Evaluation, Implementation, Computer Studies Curriculum, Public, Senior Secondary Schools, Bayelsa, and Senatorial District

Introduction

The Federal Republic of Nigeria (2014), stated the teaching of computer science at all levels of education. This may be connected to the fact that the valuable role of Computer Studies in the development of a nation needs not be over emphasized. Ibole (2020) believes that ICT rules the universe; it serves and ensures human survival, Jegede (2013) asserts that, the development in information communication technology has so greatly affected the lives of every human being so

much that, to be ignorant of the basic knowledge of this development is to live an empty, meaningless, and probably unrealistic life. Valley and Withier (2019) strongly believe that, a solid foundation in computer sciences is essential to free-thinking participation in the world. It is also clear that, this basic knowledge of ICT is essential to unlocking doors to a wide variety of professional opportunities. Computers play a major role in technological development all over the world. Countries which have successfully integrated computers in their educational system have very developed economies (Mwaniki, 2017). Nowadays computers which are a common form of ICTs, play an important role in the education sector, especially in the process of integrating technology into the educational activities. The education and communication technology. Computer has a long history of existence. Today computer technology has undergone series of transformations.

According to Kremer (2018), computer is an electronic machine that operates with remarkable speed. Initially, many believed it was impossible that computer could be a scientific field of study during the late fifties; it gradually later became accepted among the greater academic population. Computer science is the science that deals with the theory and method of processing information in digits. Computer has become a rapidly growing discipline as the technological age advanced. Computer studies or science could also be understood as the blending of principles, theories and applications of technologies that underlies the access of information. The information that the computer science is uncover, processes, stores and communicates is often encoded in a computer memory. From the above explanations, it could be deduced that computer science is wholly referring to the science of computing which is the use of computer to process data or perform calculations. Computer as an electronic machine that operates with remarkable speed and reliability, A microprocessor "brain" and electronic memory work together to enable the computer process data.

Computers were invented to solve many mathematical problems in the early stage. But today, computers have gone beyond that and there is hardly any area of life where computer cannot be applied. In a rapidly changing world, secondary education is essential for an individual to be able to access and apply information. Such ability must include the adequate use of computer. Also, the Economic Commission for Africa has indicated that the ability to use computer in accessing information is no longer a luxury, but a necessity for development. Unfortunately, many developing countries especially in Nigeria are still low in computer application and its use (Aduwa, 2020). According to Abbas et al (2013), computers have affected our lives in many ways, especially in the field of education. Computer studies is a process of training, designed to give knowledge, develop skills and abilities that could lead to the development of mental alertness and the right attitude to life. Today computer technology has undergone series of transformations. Evoh (2017) emphasized that secondary education is essential for the creation of effective human capital in any country. The need for the inclusion of computer science in the education curriculum of the Nigerian secondary schools cannot be overemphasized. In this technology-driven age, every one requires ICT competence to survive (Adom & Anie 2018).

This calls for early acquisition of computer skills by students. Oduroye (2012) has emphasized the increase in demand for computer literacy in Nigeria. This is because employees realize that computer and other ICT facilities can enhance efficiency, and employees have also realized that computers can be a threat to their jobs, and the only way to enhance job security is to become computer literacy. Teaching and learning these skills is a concern among professionals. A good

background in computer science enables people to quickly learn and understand how things around them work. Hall-Rose (2014) asserts that people need to master a minimum amount of scientific and technological knowledge to understand the world around them. Knowledge in computer is therefore pertinent, that every individual, young, old, male or female be scientifically literate in order to have a better survival. In the light of the above facts Muhammad (2019) posits that ICT plays the following roles in education:

- It promotes the principle of life-long learning/education.
- It increases a variety of educational services and medium/method.
- It promotes equal opportunities to obtain education and information.
- It develops a system of collecting and disseminating educational information.
- It promotes technology literacy of all citizens, especially for students.
- It develops distance education with national contents.
- It promotes the culture of learning at school.
- It supports schools in sharing experience and information with others.

The computer Science teacher's role is one of a facilitator of learning experience. The teacher is the one who provides learning opportunities and necessary guidance, to increase both the quality and quantity of learning acquired by the students. Educational researchers have shown that, teachers who are able to guide their students through learning situations by indirect influence such as questioning, prompting or leading rather than by direct teaching, informing or explaining, produce students who are less dependent and in general learn more effectively (Ben Yunus,2012) asserts that, the classroom teacher forms the cornerstone in curriculum implementation as the main force and the last person that ensures that any curriculum is implemented according to specification, Therefore, if a teacher is untrained or unwilling to implement curriculum plans, his or her desired success cannot be attained, Also, there is the need for the teacher to be equipped with appropriate instructional resources.

Hence the aim of this study is to determine the male and female teachers' perception on the level of implementation of computer studies curriculum in Bayelsa West Senatorial District.

Methodology

This study adopted descriptive research design. This design enabled the researcher to evaluate the implementation of Computer Studies Curriculum in public senior secondary schools in Bayelsa West Senatorial District. The population consisted of all the Computer Studies teachers in public senior secondary schools in the two (2) LGA's of the Senatorial District, with a total of 36 schools. The total population of teachers in all the public schools in the area is 287 made up of 130male and 157 female. (Source: BSSSSB, 2024).Out of 287 Computer studies teachers were select from the two (2) L.G.A's, while ballot technique was used to select a total of ninety-eight (98) computer studies teachers from ten (10) schools each from two (2)L.G.A's in the public senior secondary schools in Bayelsa West Senatorial District.

Instrument for Data Collection

The research instrument used for this study was a questionnaire titled "Evaluation of the Implementation of Computer Science Curriculum" (EICSC), made up of 21 items, designed for teachers in public senior secondary schools in Bayelsa West Senatorial District. The items were divided into two (2) sections, A and B. Section "A" contained demographic data of the respondents while section "B" was used to elicit information from the respondents based on the CIPP model and were rated on a 4-points rating of Very High Extent (VHE)-4pts, High Extent (HE)-3pts, Low

Extent (LE) -2pts and Very Low Extent (VLE) -1 pt. The questionnaire is attached as appendix to the research work. The comments from the validators were used for the final draft of the study.

Method of Data Collection and Analysis

The questionnaire was administered to a group of 98 public senior secondary school teachers in Bayelsa West Senatorial District, after a brief explanation of the purpose of this study to the respondents in the sampled schools. The instrument was administered to them and retrieved after their responses. The period of data collection lasted for two weeks. Data obtained for research questions was analyzed using mean and standard deviation. A standard reference means of 2.50 was adopted for the purpose of determining the level of implementation of Computer Studies curriculum in senior secondary schools in Bayelsa West Senatorial District. Data obtained from the test was used to answer the research questions using mean and standard deviation while Z-test was used in analyzing the hypotheses at 0.05 level of significance.

Analysis and Results

Research Question One: To what extent are the objectives of the computer studies curriculum being achieved in public senior secondary schools in Bayelsa West Senatorial district?

Table 1: Mean and standard deviation ratings in the mean response of male & females teachers on the implementation of the objectives of Computer studies Curriculum in public senior secondary schools in Bayelsa West Senatorial district (context variable)

S/N	ITEMS	VHE	HE	LE	VLE	Ν	CUM	Х	STD	Rmks
							RATING			
1.	To increase public	25	38	20	15	98	296	3.02	0.86	Accept
	awareness in science and									
	technology.									
2.	To direct the science and	63	27	4	4	98	345	3.52	.094	Accept
	technology efforts of the									
	nation along well-defined									
	national goals									
3.	Develop rudimentary	85	11	1	1	98	376	3.84	.098	Accept
	skills in the use of									
	computer for text writing,									
	computation, and data.									
4.	To use the computer and	55	36	4	3	98	339	3.45	0.93	Accept
	thereby acquire basic									
	skills such as using the									
	keyboard, accessing and									
	editing a file at the,									
	operating system level.									
5.	Using the computer to	29	37	19	13	98	278	2.83	0.84	Accept
	facilitate learning.									
Grand Mean 3.33 0.91 Acc										Accept

Criterions mean 2.5

IIARD – International Institute of Academic Research and Development

The result from table 1 above shows Mean and standard deviation on implementation of the objectives of Computer studies Curriculum in public senior secondary schools in Bayelsa west Senatorial district. Items 1, 2, 3 and 4 had mean scores of 3.02,3.52, 3.84 and 3.45 with standard deviation ratings of 0.86, 0.94, 0.98 and 0.93. This indicates that the respondents strongly agreed that implementation of the of Computer studies Curriculum in Public senior schools in Bayelsa West, increases public awareness in science and technology, it direct the science and technology efforts of the nation along well defined national goals, it develops rudimentary skills in the use of computer for text writing, computation and data, to use the computer and thereby acquire basic skills such as using the keyboard, accessing and editing a file at the operating system level. Item m5 had a mean score of 2.83 with standard deviation rating of 0.84, this means that the respondents agreed that computer to facilitate learning, The grand mean of 3.33, which is greater than the criterion mean the criterion mean of 2.50 and depicts that the respondents strongly agreed on the implementation of the objectives of Computer studies Curriculum in public senior secondary schools in Bayelsa West.

Research Question Two: What is extent is the extent of availability and adequacy of resources (input variable) for the implementation of Computer studies curriculum in public senior secondary schools in Bayelsa West Senatorial district?

Table 2: Mean score and standard deviation in the mean reference of male & females' teachers on the availability of adequate resources for the implementation of Computer studies curriculum in public senior secondary schools in Bayelsa West Senatorial district

S/N	ITEMS	VHE	HE	LE	VLE	N	CUM RATING	X	STD	Rmks
1.	There are quality teaching and learning materials for the implementation of computer science in my school	7	10	69	12	98	208	2.12	0.76	Rejected
2.	We do not have enough equipment to meet up computer science requirements	14	81	3	-	98	305	3.11	0.35	Accepted
3.	Materials such, as lesson,74,11,11,2,98, 353,3.60,0.68,Accepted, used for teaching in most senior secondary schools are out- dated	74	11	11	2	98	353	3.60	0.68	Accepted
4.	There are rooms for improvement in computer science content if resources are available in public senior secondary school in Bayelsa State.	67	16	11	4	98	342	3.49	0.72	Accepted
5.	Inadequate availability of materials resources such as instructional materials is a problem to the effective computer science curriculum content	68	16	11	3	98	345	3.52	0.70	Rejected
Grand Mean								3.17	0.88	Accept

Result from table 2 shows that item 1 had a mean score of 2.12 with standard deviation ratings of 0.76. This shows that the respondents disagreed that there are quality teaching and learning materials for the implementation of computer science in the school. Item 2 had a mean score of 3.11 with standard deviation ratings of 0.76. This revealed that the respondents strongly agreed that they do not have enough equipment to meet up computer science. Requirements. Items 3,4 and 5 had mean scores of 3.60, 3.49 and 3.32 with standard deviation ratings of 0.68,0.72and0.70. These indicates that the respondents strongly agreed that materials such as lesson note for teaching in most senior secondary schools are outdated, there are rooms for improvement in computer science content if resources are available in public senior secondary school in Bayelsa

IIARD – International Institute of Academic Research and Development

Page 6

State and there are inadequate availability of materials resources such as instructional materials is a problem to the effective computer science curriculum content. However, research question two yielded a grand mean of 3.17, which is greater than the criterion means of 2.50 and depicts that there is availability of adequate resources, for the implementation of Computer studies curriculum in public senior secondary schools in Bayelsa West Senatorial district is significantly low.

Hypotheses

Ho₁: There is no significant difference between the opinion of male and female teachers on the extent of realization of the objectives of Computer studies Curriculum in public senior secondary school in Bayelsa West Senatorial (context variable).

 Table 3: Z-test on the difference in the mean response of male and females teachers on the extent of realization of the objectives (context variable) of the computer studies Curriculum in public senior secondary schools in Bayelsa West Senatorial district

Variable	Ν	Mean	SD	z-real	Df	p-value	Decision
Male teachers	50	2.51	0.62	.557	96	.960	Accept Ho ₁
Female teachers	48	2.35	0.59				_

Table 3 shows the summary of z-test on the difference in the extent of implementation of the objectives (context variable) of the computer studies Curriculum in public senior secondary schools in Bayelsa West Senatorial. The calculated z is ($Z_{(96)}$ =,960,P>.05). The null hypothesis is retained at 05 level. This shows that there is no significant difference on the extent of implementation of the objectives (context variable) of the computer studies Curriculum in public senior secondary schools in Bayelsa West Senatorial.

Ho2: There is no significant difference between opinion of male and female teachers on the extent of availability and adequacy of resources (input variable) for the implementation of Computer studies curriculum in public senior secondary schools in Bayelsa West Senatorial district.

Table 4.: Z-test on the difference in the mean reference of male & females teachers in the
extent of available adequate resources (input variable) for the implementation of Computer
studies curriculum in public senior secondary schools in Bayelsa West Senatorial district

Variable	Ν	Mean	SD	z-real	Df	p-value	Decision
Male teachers	50	2.64					Accept Ho ₂
			1.84	.557	96	.960	
Female	48	2.29	0.94				
teachers							

Table 4 shows the summary of z-test on the difference in the extent of available adequate resources (input variable) for the implementation of Computer studies curriculum in public senior secondary schools in Bayelsa West Senatorial district. The calculated z is ($Z_{(96)}=1.84$,P>.05). The null hypothesis is retained at 05 level. This shows that there is no significant difference in the extent of implementation of available adequate resources (input variable) for the implementation of Computer studies curriculum in public senior secondary schools on Bayelsa West Senatorial district.

Discussion of Findings

Evaluation for the implementation of the computer studies Curriculum in public senior secondary schools in Bayelsa West Senatorial district

Research question one focused on the extent of attainment of the objectives of Computer studies Curriculum in public senior secondary schools in Bayelsa West Senatorial district. The result from table 1 shows that the respondents strongly agreed that implementation of the objectives of Computer studies Curriculum in public senior secondary schools in Bayelsa West, increases public awareness in science and technology, t direct the science and technology efforts of the nation along well defined national goals, it develops rudimentary skills in the use of computer for writing, computation and data, to use the computer and thereby acquire basic skills such as using the keyboard, accessing and editing a file at the operating system level and computer also facilitate learning. The grand mean of 3.33, which is greater than the criterion means the criterion mean of 2.50 and depicts that the respondents strongly agreed on the implementation of the objectives of Computer studies Curriculum in public senior secondary schools in Bayelsa West. When put to statistical test, the result from table 4.5 showed the summary of z-test on the difference in the extent of implementation of the objectives (context variable) of the computer studies Curriculum in public senior secondary schools in Bayelsa West Senatorial. The calculated z is $(Z_{(96)} =$.960,P>.05). The null hypothesis is retained at 05 level. This result =,960, shows that there is no significant difference on the extent of implementation of the objectives (context variable) of the computer studies Curriculum in public senior secondary schools in Bayelsa West Senatorial. The finding is agreement with Nigerian Educational Research and Development Council (NERDC) (2012) who asserts that the objectives of computer studies curriculum in agreement with national objectives as stated under the section on the philosophy of Nigerian education are to increase public awareness in science and technology, to direct the science and technology efforts of the nation along well-defined national goals e.g. self-reliance.

The availability and adequacy of resources (input variable) for the implementation of Computer studies curriculum in public senior secondary schools in Bayelsa West Senatorial district

Research question two sought answers the extent of the availability of adequate resources (input variable) for the implementation of Computer studies curriculum in public senior secondary schools in Bayelsa West Senatorial district. Result from table 4.2 shows that the respondents disagreed that there are quality teaching and learning materials for the implementation of computer science in the school while they agreed they do not have enough equipment to meet up computer science requirements, that materials such as lesson note for teaching in most senior secondary schools are outdated, there are rooms for improvement in computer science content if resources are available in public senior secondary school in Bayelsa State and there are inadequate availability of materials resources such as instructional materials is a problem to the effective computer science curriculum content. The grand mean of 3.17, which is greater than the criterion means of 2.50 and depicts that there is availability of adequate resources, for the implementation of Computer studies curriculum in public senior secondary schools in Bayelsa West Senatorial district is significantly low. When put to statistical test, table 4.6 shows the summary of z-test on the difference in the extent of available adequate resources (input variable) for the implementation of Computer studies curriculum in public senior secondary schools in Bayelsa West Senatorial district. The calculated z is $(Z_{(96)}=1.84, P>.05)$. The null hypothesis is retained at 05 level. This shows that there is no significant difference in the extent of implementation of available adequate

resources (input variable) for the implementation of Computer studies curriculum in public senior secondary schools on Bayelsa West Senatorial district. This finding is accordance with Ajeigbe, et al (2015) concluded that the availability and utilization is on the average and therefore recommended among others that there was the need to provide ICT facilities in schools for effective teaching of computer studies in secondary schools.

Summary of Findings

Based on the analysis of the data generated, it was found that:

- 1. There is no significant difference between the views of male and female teachers on the extent of implementation of objectives (context variable) of the computer studies Curriculum in public senior secondary schools in Bayelsa West Senatorial district.
- 2. There is no significant difference between the views of male and female teachers on the extent of availability and adequacy of resources (input variable) for the implementation of Computer studies curriculum in public senior secondary schools on Bayelsa West Senatorial district.

References

- Abali,S.O.(2018).*Educational innovations for quality delivery in universities in Rivers state.* Unpublished Doctoral Thesis, University of Port-Harcourt.
- Abbas, B., & Hooper, S.(2020). Computers as cognitive media: Examining the potential of computers in education. *Computer in Human Behaviour*, *16*(1), 537-552.
- Abiri, J.O.O.(2017). An evaluation of the postgraduate programme of the University of Ilorin. *Ilorin Journal of Education*, 7(2),1-17.
- Adesoji,F.A. (2018). An appraisal of integrated science teaching in Nigeria, *Journal of Educational Research*,2(3),134-138.
- Adom, R., & Anie, A.K.(2018). Teacher's competence in ICT: Implications for computer education in Zimbabwean secondary schools international. *Journal of Social Science Education*, 1(4),25-32.
- Aduwa, A. A. (2010). Introduction to computer education. Unpublished Monograph, Obafemi Awolowo University, Ile-efe.
- Afibola, M. A. (2018). Innovation and curriculum implementation for basic education in nigeria: Policy priorities and challenges of practices and implementation. *Research Journal of International Studies and Issues*, 8(4), 51-58.
- Ajeigbe, T., Ogunsakin I., & Shogbesan, Y. (2015). The availability of ICT facilities in secondary schools in Osun state. *Journal of Earnia*, 2(3),316-321.
- Akinsola, M. K. (2014). Comparative effects of mastery learning strategies on students' achievement of self-concept in mathematics. Unpublished Ph.D Thesis, University of Ibadan.
- Akinsola, M.K.(2020).Enriching science technology and mathematics education: *Effect of resource utilization on student's achievement in geometry*. 41st Annual Conference of Science Teachers Association of Nigeria,289-291.
- Akubuilo, D. U., Nnnam, V. I., & Ugo, A. C. (2021). The availability and utilization of information and communication technologies (ICT) facilities for teaching social studies in secondary schools in Enugu State. *Quest Journal of Research in Humanities and Social Science*, 9(5), 76-83.
- Akuezuilo, E. O. (2017). The new 9-year basic since and technology curriculum and challenges of its implementation. *Journal of Curriculum and Instruction*, 6(2) 1-6.
- Akyeampong, K., Sabate, R., Hunt, F., & Anthony, J.(2019). *Review of research on basic education* provision in Nigeria. Centre for International Education.
- Alani, R. A. (2012). Planning for universal basic education in Nigeria. In T. Ajayi, J. O. Fadipe, P.K. Ojedele & E.E. Oluchukwu, (Eds.), Planning and administration of universal basic education in Nigeria. Pekor Publications.
- Amakiri, H., Atisi E., Ukwuji R. P.I., (2006). Effect of assessment for learning (afl) on computer studies academic achievement of senior secondary students in Rivers state. *European Journal of Educational and Development Psychology*, 4(2), 12-24,
- Amugo, M.B. (2017). Designing and delivering curriculum in Nigeria. Ibadan University Press.
- Anyakogu, P.M. (2012). The idea of 6-3-3-4 system. Mumddus Press Ltd.
- Auwalu, M. O., & Obomanu, B. J. (2014). Factors related to underachievement in science, technology and mathematics education (stme) in secondary schools in Rivers state, Nigeria. *World Journal of Education*, 1(1),102-123.

- Ayodele, O.T., & Balogun, S. A. (2018).Status of resources for the teaching and learning of integrated science in Lagos state junior secondary schools. *Journal of Science and Information Technology*, 4(1), 14-18.
- Babalola, V. O. (2014). Resource materials in the implementation of curriculum in the 21st century.In A. O. K. Noah, D. O. Shonibare, A. A. Ojo, & T. Olujuwon (Eds), Curriculum implementation and professionalizing teaching in Nigeria. Central Educational Services.
- Bamikole, B. B. (2004). Evaluation of computer science curriculum in junior secondary schools in Oyo, Osun and Ogun states. Unpublished Ph.D Thesis, University of Ibadan.
- computerhope.com(2018).Definition of computer literacy. <u>https://www.computer.com/jarg</u> on/c/complite.htm
- Darodjat, D., & Wahyudhiana, W. (2015). Model evaluasi program pendidikan islamadina. Journal Pemikiran Islam, 11, 1-23.
- Destiny, A.,& Nsiegbe C.G. (2020), Evaluating computer science curriculum and teacher's methodological approach in senior secondary schools in Port Harcourt metropolis, Rivers state. https.
- Dike, V. W. (2020).School library facilities required for successful implementation of the universal basic education in Nigeria. Paper presented at the Annual Conference of the Nigerian School Library Association, university of Nigeria, Nsukka.
- Dinah, C.S.(2017).Factors which influence academic performance in computer studies in Kenya: A perspective for global competitiveness. *International Journal of Current Research*, 5(12),4296-4300.
- Egbugara, U. O. (2012).*Pre-service education of integrated science teachers in Nigeria*. Paper presentation at the International Workshop on Integrated Science Teaching, college of education, University of Ibadan, Ibadan.
- Emiekulu,(2016). Science teaching as a specialist subject. Journal of Nigeria, 13,33.
- Ereh, C.E.(2015).Teacher characteristics and school curriculum implementation in Nigerian secondary schools: A theoretical review. *Journal of the Nigerian Academy of Education*,2(1),111-120.
- Eshict, I. T. (2016). Improvisation in science teaching: Philosophy and practice. Belpot Nigeria.
- Esu, A. E., & Emah, I. (2014). *Nature, purpose process of curriculum*. In Nwagwu, N.A. &Ivowiu M. O. (Eds.), Education in Nigeria: Development and challenges. CIBN Press Limited.
- Evoh, L. M. (2017). Innovations in integrated science curriculum for sustainable development in Nigeria: The NERDC. 43rd Annual Conference of Science Teachers 'Association of Nigeria.
- Ezewu, T. C.(2015). The teaching of computer studies in high school. Oxford University Press.
- Falola-Anoemuah, O. A. (2014). *Formative evaluation of national sexuality education curriculum in Nigeria.* Unpublished Ph.D Thesis, University of Ibadan.
- Faruk, Y.U. (2015).*Implementation of computer education programme in Kano science and technical colleges*, Unpublished M.Ed Dissertation, Bayero University, Kano.
- Federal Republic of Nigeria (2013). National policy on education. NERDC Press.
- Frazer, B. J., Okebukola, P. A. O., & Jegede, O. J. (1992). Assessment of learning environment of Nigerian school laboratory. Journal of Science Teachers Association of Nigeria, 22(2), 1-17.
- Gibbons,S., Kimmel, H., & O'shea M. (2017).Changing teacher behaviour through staff development: implementing the teaching and content standards in science. *School Science and Mathematics*, 9(6) 302-310.

- Ibifuro B., Alele S., & Maureen, K. (2019). The analysis of availability and utilization of instructional facilities in public secondary schools in Port Harcourt metropolis. *International Journal of Innovative Education Research*, 7(3), 94-100.
- Igbokwe, U.L.(2019). Overview of curriculum in classroom management for curriculum implementation: Applying psychological principles. Timex Press.
- Igwe,D.O.(2020). Science teacher qualification and students' performance in secondary schools in Kano State, *Journal of Science Teachers Association*, Nigeria, 26(2), 24-51.
- Jumari, M. P. I., & Suwandi, M. (2021). Evaluasi program pendidikan madrasah ramah anak: Tinjauan teoretis dan praktis berbasis cipp model. Penerbit Adab.
- Mandah, N. N.S., Abasido, E.J., Mohammed, J.I. (2020). An assessment of municipal and non-58urban secondary school tutors perception of computer science subject inRivers state, *Journal of Global Research in Education and Social Science*, 14(3),39-58.
- Moges , L. (2017). Practice of student assessment in competency bases modular instruction for quality education in Ethiopia: the case of college of education in Amhara region universities. *Journal of Educational Assessment in Africa*, 12(2), 10-34.
- Mukhlis, S., &Nurbaiti,U. S. (2021). Evaluasi program bantuan stimulan perumahanswadaya (bsps) pada kelurahan tanjung unggat. *Jurnal ilmu sosial dan ilmu politik*2(2),45-60.
- Nnamani,S.N.(2017).Factors militating against the implementation of junior secondary school (J.S. S.) music curriculum in Enugu State: challenges and the way forward. *International Journal of Music and Performing Arts*, 5(1),42-51.
- Nwafor, T. (2003). Investigation study of the cause of students' poor performance in secondary schools (computer science). Unpublished Project, Imo State University.
- Nwiyi, G. U., & Uriah O. A. (2007). Teacher empowerment and commitment to duty in Rivers state. *Journal of Pedagogy and Educational Development*, 12(1)84-89.
- Nwiyi,G.U. (2019).Quality assurance and curriculum implementation in secondary schools in Port Harcourt. *Multidisciplinary Journal of Research Development*, 12(2), 159-165.
- Obanya, P.(2017). Thinking and talking education. Evans Brothers Nigeria Publishers Ltd.
- Offorma, G.C. (2014). *Approaches to curriculum development*. In Nwagwu, N.A. & Ivowi, N. (Eds.), Education in Nigeria: Development and challenges. Thenety Limited.
- Ogbodo, C. M. (2016). *Strengthening the initial quality assurance mechanism in the university*. A Paper, EFT Capacity Building Workshop for Knowledge.