IMPACT OF BIOLOGY TEACHERS CHARACTERISTICS ON CONTINUOUS ASSESSMENT AMONG SENIOR SECONDARY SCHOOL TEACHERS IN KWARA STATE

Florence Omosholape Abidoye[1], Aladesuyi David Adeyemi[2]
University of Ilorin, Ilorin, Kwara State[1-2]
Volume 8, Issue No.2

Abstract

This study examines the influence of teacher characteristics on continuous assessment practices in biology education in Kwara State, Nigeria. The goal of education is to facilitate comprehensive development, and assessment is a fundamental tool for evaluating the achievement of educational objectives. The research investigates how teachers' gender, academic qualifications, and years of teaching experience impact their approaches to continuous assessment in biology. The findings indicate that teacher characteristics play a significant role in shaping continuous assessment practices. Female teachers tend to administer assessments more frequently and provide valuable feedback to students. Educators with higher academic qualifications demonstrate a better understanding of assessment theory and align assessments with curriculum objectives. Furthermore, experienced teachers excel in designing and implementing assessments but may benefit from ongoing support to prevent rigidity in their assessment methods. To enhance continuous assessment practices, it is recommended that tailored professional development programs be established for biology teachers. Additionally, mentorship programs can assist less-experienced teachers in improving their assessment strategies. Promoting gender-sensitive teaching techniques and encouraging educators to stay updated on assessment best practices are crucial steps toward enhancing biology education in Kwara State.

Keywords: *Biology, teachers' characteristics, continuous assessment*

1.0 Introduction

The aim of every educational program is to enable learners acquire the framework of knowledge and concepts that lead to the total development of the individual. It is only through the use of assessment procedure that one can establish the extent to which, educational goals have been attained. Assessment involves the measurement of the extent of progress made by an individual in the process of collecting, synthe-

sizing and interpreting information for the purpose of decision making. In broad terms, assessment includes all the strategies teacher employ to gather descriptive information in their classroom (Byabato, 2014). The knowledge of science is important because science is put to practice in almost every sphere of life, for instance, students' understanding of science allows them to deal with the social and biological issues that affects them at home or in the wider environment. Science comprises the basic disciplines such as Biology, Chemistry, Physics and Mathematics. The Federal Ministry of Education (FME), (2013) identifies biology among the core-science subjects offered at the Senior School Certificate Examination (SSCE) level. This is as result of the relevance of biology to individuals and the society. It is a standard subject at all levels of education because it is relevant to man's life (Akindele, 2003).The significance of biology as identified by Maduabum (2009) is that it enables individuals to: Understand and appreciating life, bring into focus the need to maintain good health, helping individuals to understand the parts of his/her body and their functions, promoting the individual for choice of careers, enabling one to question superstition due to sustained interest arising from comprehension of the cause of events, impact factual knowledge and stimulates scientific reflective thinking so as to produce a better informed individual, inculcate in the individual scientific skills and attitude in his approach to personal and social problems. Opera, Onyekuru & Njoku (2015), defined assessment as the process of identifying, gathering and interpreting information about students learning. It is believed that the overall purpose of assessment is to provide information on students' achievement, performance, progress and set the direction for ongoing teaching and learning. Nitko as cited by Opera et-al (2015), defined assessment as a system of obtaining information that is used for making decisions about pupils, curricular, programmes and educational policy in a learning environment. Assessment is a powerful process that can either optimize or inhibit learning, depending on how it is applied. All the activities teachers used to help students learn and judge their progress is known as assessment. There are different types of assessment such as formative and summative assessments. Formative and summative assessment are usually referred to as assessment for learning and assessment of learning respectively.

Continuous assessment reveals information about a student's academic achievement through the effort of teachers who em-

ploy and apply different types of assessment meant for measuring the achievement of their students. A comprehensive data of students are obtain through test scores, assignment, homework, classroom, non-test data from biographies, observation, project, anecdotal record, situational test and so on. As such conditions assessment takes into account the total development of biology teachers through student when cognitive, affective and psychomotor domains are considered and assessed (Osuji, 2010).

Research on the influence of a teacher's gender on continuous assessment practices has shown mixed results. While there may be gender differences in teaching styles and communication patterns, these differences do not consistently translate into variations in the use of continuous assessment. Studies suggest that the impact of teacher gender continuous assessment is often context-dependent and influenced by cultural norms (Erdogan & Stuessy, 2016).

Teachers' academic qualifications, including their levels of education and subject-area expertise, can significantly affect their understanding and implementation of continuous assessment. Educators with higher academic qualifications are often better equipped to design assessments that align with curriculum goals and are psychometrically sound. They may also possess a deeper understanding of assessment theory and practice, which can lead to more effective use of continuous assessment methods (Lietz & Csapó, 2016).

Teacher experience is a critical factor that influences the use of continuous assessment. Research suggests that experienced teachers tend to be more skilled in designing and implementing continuous assessment methods, adapting assessments to student needs, and providing constructive feedback (Forslund Frykedal & Hammar Chiriac, 2017). However, the relationship between years of experience and continuous assessment effectiveness may not be linear, as there is a potential for experienced teachers to become entrenched in their assessment practices and resistant to change (Guskey, 2015).

It's essential to recognize that these teacher characteristics often interact with one another. For example, the influence of a teacher's academic qualifications on continuous assessment may be mediated by their years of experience, as more experienced teachers may apply their advanced knowledge more effectively. Additionally, the impact of gender on continuous assessment practices may vary depending on the subject matter and grade level being taught (Gorard et al., 2012).

Statement of the Problems

In the realm of education, the role of biology teachers in shaping the learning experiences of senior secondary school students cannot be overstated. Their teaching characteristics, including pedagogical approaches, subject knowledge, interpersonal skills, and enthusiasm, are critical factors that influence students' performance and engagement in continuous assessment. However, despite the acknowledged importance of biology teachers in the educational process, there is a notable lack of comprehensive research on the impact of their characteristics on continuous assessment among senior secondary school students in Kwara State, Nigeria. Biology teachers in Kwara State come from diverse backgrounds and educational experiences, which may result in substantial variability in their teaching characteristics. This variability may affect the quality and effectiveness of continuous assessment practices within the state's senior secondary schools. In light of these issues and the dearth of empirical research on the subject, this study aims to investigate the impact of biology teachers' characteristics on continuous assessment among senior secondary school students in Kwara State.

Objectives of the Study

The aim of the study was to impact of assessment on the teaching of biology in secondary schools in Kwara state. Specifically, the study's objectives were to:
1. find out impact of teacher's gender on continuous assessment in teaching biology in Kwara state.
2. find out impact of teacher's academic qualification on continuous assessment in teaching biology in Kwara state.
3. find out impact of teacher's year of experience on continuous assessment in teaching biology in Kwara state.

Research Questions

The following research questions were formulated to guide the study:
1. Does teacher's gender impact continuous assessment in teaching biology in Kwara state?
2. Does teacher's academic qualification impact continuous assessment in teaching biology in Kwara state?
3. Does teacher's year of experience impact continuous assessment in teaching biology in Kwara state?

Research Hypotheses

The following hypotheses were formulated for the study and tested at 0.05 level of significance.
Ho1: There is no significant impact of teacher's gender difference in continuous assessment among teachers in teaching biology
Ho2: There is no significant impact of teacher's academic qualification

difference in continuous assessment among teachers in teaching biology

Ho3: There is no significant impact of teacher's year of experience difference in continuous assessment among teachers in teaching biology

2.0 Conceptual Framework

The Concept of Assessment in Biology Education

Understanding the concept of Continuous Assessment makes implementation easier. To some, it means a summative 'mark' or score added to the final examination to certify students; some believe it to be a diagnostic and formative evaluation of student's learning (Ango, 1997). According to Nitko (1994), assessment is the process of gathering information for the purpose of making decisions about education policy, curriculum programmes and about individual students learning. It refers to the process of gathering relevant information. F.M.E. (1985) pointed out that Continuous Assessment is the mechanism whereby final grading of students in the cognitive, affective and psychomotor domains of behaviour systematically take account of all performance during a given period of schooling, such an assessment involves the use of a great variety of modes of evaluation for the purpose of guiding and improving the learning performances of students.

Assessment is however a means to an end, not an end in itself. It serves several purposes particularly in decision making whether at primary, secondary or tertiary level (Ijaya, 2002). Continuous Assessment is classroom strategy implemented by teachers to ascertain knowledge, understanding and skills attained by pupils. Teachers administer assessment in a number of ways over time to allow them to observe multiple tasks and to collect information about what pupils know, understand and can do. These assessments are curriculum based tasks previously taught in class. (Lewis, 1997). Yoloye (1984), described Continuous Assessment as a method of evaluating the progress and achievements in educational institution. Yoloye's view aims at getting the truest possible picture of each student's ability and at the same time help each student to develop his or her abilities to the fullest. It is a method whereby the final grading of students considers in a systematic way their whole performances during a given period of schooling. The view expressed by Yoloye, shows that Continuous Assessment is progressive in terms of evaluating the resultant changes in the behaviors of the learner based on his or her academic achievement, character development and manipulative skills. This method of assessment is in contrast with the former method of assessment, which is narrow because it only assesses the intellec-

tual progress of the students. Bajah (1984), views Continuous Assessment as the continuous updating of judgment about performance in relation to specific criteria, which allows at any time a cumulative judgments to be made about performance of these same criteria. This view indicates that certain basic criteria must be present before any assessment can be effectively carried out.

Ezenwa and Okoye (1981), defined Continuous Assessment as a systematic and objective process of determining the extent of a student's performance in all the expected changes in his behaviors from the day he started a course of study in a continuous and progressive manner to the end of such a course of study and a judicious accumulation of all pieces of information derived for this purpose with a view of using it to guide and shape the student in his learning from time to time and serve as a basis of important decisions about the students. In effect, Continuous Assessment is seen as a systematic and objective method of determining the extent of a student's performance in all the expected changes of his behaviours throughout the course of study.

Denga (1983) stated that Continuous Assessment means total evaluation of the pupils on the basis of their curriculum and non-curriculum activities, which is in and outside the school. Denga's view means students are evaluated on the basis of planned and unplanned activities within and out of the school system. This provides the true assessment of the pupils' academic and non-academic achievements. Examination is not always the true test of one's ability. This is more so in a situation where the examiners are subjective in their judgments or when the students' are faced with one problem or the other during the time of examination. The only remedy to such situation is to have various assessments covering the three essential domains; that is cognitive, affective and psychomotor.

Hassan (1994), reported that Continuous Assessment is a systematic collection of marks or grades over a period of time and its aggregation into a final grade. Hassan's view gives the classroom teacher the scope to make use of variety of assessment techniques appropriate to the subject being offered by the students. Such procedures include practicals, projects and fieldwork. All these have their place in the scheme of Continuous Assessment as grades and marks will be awarded on the basis of achievement in each of the methods used for determining the student's performance.

Turton (1983), stated that Continuous Assessment is not only the recording and compilation of data, but assessment of the progress of the students which is immediate-

ly linked to the instruction they have been given in an attempt to change the behaviour of the student. It includes an in-built mechanism and innovations such as the instructional methods needed by the teacher for his own improvement of teaching. Turton's view enhances learning by the students since assessment involves the use of a variety of modes of evaluation and improving the learning and performance of the students. Andrew (2000), viewed Continuous Assessment as a means of indicating the progress or maturation of the student but it is also used especially for detecting problems. It is therefore, in the interest of the teacher to administer some form of assessment on a continuous basis on his students to evenly cover the material he is teaching. Characteristic Features of Continuous Assessment Based on the concept of Continuous Assessment, it has many characteristics such as: Diagnostic: Another characteristic of Continuous Assessment is the diagnostic function. Ohuchi (1988), states that there are many uses for which assessment data scores may be put in our present system of education. Assessment for placement and/or certification is highly appreciated in Continuous Assessment, which serves as feedback to both teachers and students. It offers the opportunity of taking corrective actions whenever any undesirable trends are observed. Prognostic: This aspect of Continuous Assessment looks into the future and predicts how well the student will perform on similar tasks or even completely different task in future (Nwaze, 1998). Formative: Ezenwe (1992), observed that the objective of formative assessment is to enable the students to monitor his progress and with a view to identify his learning problems and correct them. Summative: This type of assessment is given at the end of the term, semester or years. It is mostly concerned with decision-making at the end of the term, semester or end of the year and such decision takes into account the results of the formative assessment. Turton (1983), added five practical characteristics to school based Continuous Assessment and these include:

- Simplicity: This aspect stressed that Continuous Assessment should be simple in both design and operation. It stressed that any new idea to be introduced into the institutional setting has to be simple at the onset, the refinement could be later.
- Comprehensibility: In this aspect Continuous Assessment data or scores should be in form of what can be easily comprehended by all concerned one of the aims of the system is to communicate present information to the students. Comprehensibility is achieved through

the adoption of a system of grading based on ranking students in order to merit within a particular year or group for each subject.

- Security: The security of Continuous Assessment is expressed in two areas namely; the physical security aspect and the security against forgery and misuse. Records of students had to be physically secured against natural hazards such as fire, rain and theft.
- Validity: This includes the content and face validity (that is, internal and external) within the institution and Continuous Assessment ensures internal consistency of results. Externally, it is affected by the system of moderation.
- Integrity: In this aspect, integrity is promoted within the system through making reasonable demands on the teachers in terms of training and materials. Well design forms of data recording and ensuring an equitable distribution of the extra work, which Continuous Assessment entails are equally important.

3.0 Method

Research Type

The research type for this study was Descriptive Survey type. Percentage were used to answer the research questions while independent t-test was to test hypothesis one and one way analysis of variance (ANOVA) were used to test the hypothesis two and three hypotheses.

Questionnaire Development

The researcher adopted a self-designed Questionnaire tagged "Impact of teacher characteristics on continuous assessment on teaching Biology". The questionnaire consist of 4 items. Section A comprises of personal data of the respondents, section B was to find out Impact of teacher characteristics on continuous assessment on teaching Biology using the Likert scale of five point.

Sample Selection

There are one thousand six hundred and ten (1,210) secondary Biology teachers. In Kwara State. The population of the study was made up of all female and male secondary school teachers in Kwara state. The sample size was 240 biology teachers from 120 secondary schools; two (2) Biology teachers were selected each. The sample size was based on Research Advisor (2006) Table for determining sample size. A Multi- Stage cluster sampling procedure was used to select 110 teachers; 2 teachers each from 55 selected secondary schools Kwara Central Senatorial district, 90 teachers; 2 biology teachers each from 45 selected secondary schools in Kwara South Senatorial district and 40 teachers; 2 Biology teachers each from 20 selected secondary schools in Kwara North Senatorial district respectively through the application of simple random sampling. The sample size was made up

of male and female biology teachers with different level of qualifications and teaching experience.

Study Area

This research study area was limited in scope to two hundred and twenty (120) secondary schools where Biology as a subject was taught by Biology teachers in Kwara State. Here the respondents from these schools are only Biology teachers.

Respondents of the Study

This research serves as a survey of Biology teachers in Kwara State. They were the main respondents of this study. They were the target of observation of researchers. The researchers chose the respondents in Kwara State because the respondents would be affected by the researchers' research.

Data Collection, Validity, and reliability

A letter of introduction was collected from Department of Science Education, Faculty of Education, University of Ilorin, Ilorin, by the researcher to and given to the Principals of the selected Secondary Schools seeking permission to administer the questionnaire. The questionnaire was distributed to the biology teachers and retrieved on the day of distribution. The completed questionnaires were collected for collation and subsequently analyzed.

The study adopted face validity method of validation. Face validity of the instruments were established by three experts, two from the Department of Biology Education and one from Department of Measurement and Evaluation in University of Ilorin, Ilorin. The instrument was validated to ensure the appropriateness of language used, suitability of the content and the extent to which the items will elicit the expected information based on the objectives

The validated instrument was administered twice at an interval of three weeks after the first administration. Scores from the first and second administrations was analyzed using Cronbach's alpha Statistic and a reliability coefficient of .93 was obtained respectively. This implied that the instrument was adequately reliable for the study.

To interpret the data effectively, the researchers applied the following statistical treatment. The percentage, the weighted mean, t-test and ANOVA was used to determine used to determine the significant difference.

1. Percentage

This will determine the frequency count and percentage distribution of personal variable of the respondents.

Formula: $\% = f/n \bullet 100$

% is the percentage
F is the frequency
N is the total respondents
100 is a constant value.

2. Average weighted mean

This will be used to de-

mine the movement of the respondent with regard to their answer
Formula: x= fx/n
X is the weighted mean
F is the frequency
X is the weight of each item
N is the number of cases

4.0 Results and Discussion

Descriptive Data Analysis

Teacher's gender and continuous assessment in teaching biology

Table 1 shows that 46(36%) male biology teachers frequently administer continuous assessment daily, 106(68%) female biology teachers frequently administer continuous assessment daily. 77(64%) male biology teachers frequently administer continuous assessment weekly while 14(12%) female biology teachers frequently administer continuous assessment weekly. 81(68%) male biology teachers teaching of biology are significantly enhanced by continuous assessment, 92(77%) female biology teachers teaching of biology are significantly enhanced by continuous assessment. 39(32%) male biology teachers are significantly hindered by continuous assessment while 28(23%) while female biology teachers teaching of biology are significantly hindered by continuous assessment. 76(63%) male biology teachers use continuous assessment results to adapts their teaching methods and content always, 91(76%) female biology teachers use continuous assessment results to adapts their teaching methods and content always, 44(37%) male biology teachers use continuous assessment results to adapts their teaching methods and content occasionally while 29(44%) female biology teachers use continuous assessment results to adapts their teaching methods and content occasionally. 88(73%) male biology teachers always provide feedback on continuous assessments to help students understand their mistakes, 102(85%)

S/N	Item	Gender	
1	How frequently do you administer continuous assessments in teaching biology?	Male	Female
	Daily	43(36%)	106(88%)
	Weekly	77(64%)	14(12%)
2	To what extent does continuous assessment influence your teaching of biology?		
	significantly enhances teaching	81(68%)	92(77%)
	significantly hinders teaching	39(32%)	28(23%)
3	When do you use continuous assessment results to adapt your teaching methods and content?		
	Always	76(63%)	91(76%)
	Occasionally	44(37%)	29(44%)
4	How often do you provide feedback on continuous assessments to help students understand their mistakes?		
	Always	88(73%)	102(85%)
	Occasionally	32(27%)	16(15%)

female biology teachers always provide feedback on continuous assessments to help students understand their mistakes, 32(27%) male biology teachers occasionally provide feedback on continuous assessments to help students understand their mistakes while 32(27%) female biology teachers occasionally provide feedback on continuous assessments to help students understand their mistakes. The result indicated that unlike the male teachers, majority of the female teachers frequently administer continuous assessments in teaching biology. Also, continuous assessment influence both gender teaching of biology, male and female teachers always use continuous assessment results to adapt your teaching methods and content. In addition, male and female teachers always provide feedback on continuous assessments to help students understand their mistakes.

Teacher's academic qualification and continuous assessment in teaching biology

Table 2: Teacher's academic qualification and continuous assessment in teaching biology

S/N	Item	Teachers 'Academic Qualification		
1	How frequently do you administer assessments in teaching biology?	Bachelor's degree	Masters degree	Ph.D
	Daily	13(5%)	16(7%)	27(11%)
	Weekly	147(61%)	34(14%)	03(1%)
2	To what extent does assessment influence your teaching of biology?			
	significantly enhances teaching	131(55%)	42(18%)	29(12%)
	significantly hinders teaching	29(12%)	08(3%)	1(0.4%)
3	When do you use assessment results to adapt your teaching methods and content?			
	Always	156(65%)	41(17%)	28(12%)
	Occasionally	4(2%)	09(4%)	02(0.8%)
4	How often do you provide feedback on assessments to help students understand their mistakes?			
	Always	148(62%)	42(18%)	29(12%)
	Occasionally	12(5%)	08(3%)	1(0.4%)

Table 2 shows that 13(5%) Bachelor's degree biology teachers frequently administer continuous assessment daily, 16(7%) Master's degree biology teachers frequently administer continuous assessment daily while 27(11%) PhD degree biology teachers frequently administer continuous assessment daily. 147(61%) Bachelor's degree biology teachers frequently administer continuous assessment weekly, 34(14%) Masters' degree biology teachers frequently administer continuous assessment weekly while 03(1%) PhD degree biology teachers frequently administer continuous assessment weekly. 131(55%) Bachelor's degree biology teachers teaching of biology are significantly

enhanced by continuous assessment, 42(18%) Master's degree biology teachers teaching of biology are significantly enhanced by continuous assessment while 29(12%) PhD degree biology teachers teaching of biology are significantly enhanced by continuous assessment. 29(12%) Bachelor's degree biology teachers teaching of biology are significantly hindered by continuous assessment, 08(3%) Master's degree biology teachers teaching of biology are significantly hindered by continuous assessment while 1(0.4%) PhD degree biology teachers teaching of biology are significantly hindered by continuous assessment while female biology teachers teaching of biology are significantly hindered by continuous assessment. 156(66%) Bachelor's degree biology teachers use continuous assessment results to adapts their teaching methods and content always, 41(17%) Master's degree biology teachers use continuous assessment results to adapts their teaching methods and content always while 28(12%) PhD degree biology teachers use continuous assessment results to adapt their teaching methods and content always. 4(2%) Bachelor's degree biology teachers use continuous assessment results to adapts their teaching methods and content occasionally, 09(4%) Master's degree biology teachers use continuous assessment results to adapts their teaching methods and content occasionally while 02(0.8%) PhD degree biology teachers use continuous assessment results to adapt their teaching methods and content occasionally. 148(62%) Bachelor's degree biology teachers always provide feedback on assessments to help students understand their mistakes, 42(18%) Master's degree biology teachers always provide feedback on assessments to help students understand their mistakes while 29(12%) PhD degree biology teachers always provide feedback on assessments to help students understand their mistakes. 12(5%) Bachelor's degree biology teachers occasionally provide feedback on assessments to help students understand their mistakes, 08(3%) Master's degree biology teachers occasionally provide feedback on assessments to help students understand their mistakes, 1(0.4%) PhD degree biology teachers occasionally provide feedback on assessments to help students understand their mistakes. The result indicated that unlike the bachelor and master's degree, teachers who have PhD frequently administer continuous assessments in teaching biology. Also, continuous assessment influence teacher's irrespective of their degree teaching of biology, teachers with degree always use continuous assessment results to adapt your teaching methods and content. In addition, teachers with

degree always provide feedback on continuous assessments to help students understand their mistakes.

Teacher's year of experience and continuous assessment in teaching biology

Table 3: Teacher's year of experience and continuous assessment in teaching biology

S/N	Item	Teacher's year of experience			
	How frequently do you administer assessments in teaching biology?	< 1 year	1-10 years	11-20 years	> 20 years
	Daily	33(14%)	26(11%)	25(10%)	31(13%)
	Weekly	47(20%)	44(6%)	33(13%)	01(0.4%)
	To what extent does assessment influence your teaching of biology?				
	significantly enhances teaching	76(31%)	61(25%)	48(20%)	29(12%)
	significantly hinders teaching	4(2%)	09(4%)	02(0.8%)	3(1.3%)
	When do you use assessment results to adapt your teaching methods and content?				
	Always	73(29%)	61(25%)	48(12%)	30(13%)
	Occasionally	7(3%)	09(4%)	10(4%)	2(0.8%)
	How often do you provide feedback on assessments to help students understand their mistakes?				
	Always	72(30%)	61(25%)	48(20%)	26(11%)
	Occasionally	8(3%)	09(4%)	02(0.8%)	6(2.5%)

Table 3 shows that 33(14%) of biology teachers with < 1 year teaching experience frequently administer continuous assessment daily, 26(11%) of biology teachers with 1-10 years teaching experience frequently administer continuous assessment daily, 25(10%) of biology teachers with 11-20 years teaching experience frequently administer continuous assessment daily while 31(13%) of biology teachers with >20 years teaching experience frequently administer continuous assessment daily. 47(20%) of biology teachers with < 1 year teaching experience frequently administer continuous assessment weekly, 44(6%) of biology teachers with 1-10 years teaching experience frequently administer continuous assessment weekly, 33(13%) of biology teachers with 11-20 years teaching experience frequently administer continuous assessment weekly while 01(0.4%) of biology teachers with >20 years teaching experience frequently administer continuous assessment weekly. 76(31%) of biology teachers with < 1 year teaching experience of biology are significantly enhanced by continuous assessment, 61(25%) of biology teachers with 1-10 year teaching experience of biology are significantly enhanced by continuous assessment, 48(20%) of biology teachers with 11-20 year teaching experience of biology are significantly enhanced by continuous assessment while 29(12%) of biology teachers with >20 year teaching experience of biology are significantly enhanced by continuous assessment. 4(2%) of biology teachers with < 1 year teaching experience

of biology are significantly hindered by continuous assessment, 04(4%) of biology teachers with 1-10 year teaching experience of biology are significantly hindered by continuous assessment, 02(0.8%) of biology teachers with 11-20 year teaching experience of biology are significantly hindered by continuous assessment while 3(1.3%) of biology teachers with >20 year teaching experience of biology are significantly hindered by continuous assessment. 73(29%) of biology teachers with < 1 year teaching experience of biology use continuous assessment results to adapts their teaching methods and content always, 61(25%) of biology teachers with 1-10 year teaching of biology use continuous assessment results to adapts their teaching methods and content always while 48(12%) of biology teachers with 11-20 year teaching of biology use continuous assessment results to adapts their teaching methods and content always. 30(13%) of biology teachers with >20 year teaching of biology use continuous assessment results to adapts their teaching methods and content always. 7(3%) of biology teachers with < 1 year teaching experience of biology use continuous assessment results to adapts their teaching methods and content occasionally, 61(25%) of biology teachers with 1-10 year teaching of biology use continuous assessment results to adapts their teaching methods and content occasionally while 48(12%) of biology teachers with 11-20 year teaching of biology use continuous assessment results to adapts their teaching methods and content occasionally. 30(13%) of biology teachers with >20 year teaching of biology use continuous assessment results to adapts their teaching methods and content occasionally. 72(30%) of biology teachers with < 1 year teaching experience of biology provide feedback on assessments to help students understand their mistakes always, 61(25%) of biology teachers with 1-10 year teaching experience of biology provide feedback on assessments to help students understand their mistakes always, 48(20%) of biology teachers with 11-20 year teaching experience of biology provide feedback on assessments to help students understand their mistakes always while 26(11%) of biology teachers with >20 year teaching experience of biology provide feedback on assessments to help students understand their mistakes always. 8(3%) of biology teachers with < 1 year teaching experience of biology provide feedback on assessments to help students understand their mistakes occasionally, 09(4%) of biology teachers with 1-10 year teaching experience of biology provide feedback on assessments to help students understand their mistakes

occasionally, 02(0.8%) of biology teachers with 11-20 year teaching experience of biology provide feedback on assessments to help students understand their mistakes occasionally while 6(2.5%) of biology teachers with >20 year teaching experience of biology provide feedback on assessments to help students understand their mistakes occasionally. The result indicated that teachers who have highest experience frequently administer continuous assessments in teaching biology. Also, continuous assessment influence teacher's irrespective of their years of experience in teaching of biology, teachers with experience use continuous assessment results to adapt your teaching methods and content. In addition, teachers with experience always provide feedback on continuous assessments to help students understand their mistakes.

Inferential Analysis.

1 Impact of teachers' gender difference in continuous assessment among teachers in teaching biology

Table 5: t-test independent sample for Gender Difference among teachers in continuous assessment in teaching biology

Gender	N	Means	S.D	t-cal.	Df	P-Value
Male	120	29.13	5.74	2.02	238	.045
Female	120	30.76	6.41			

The finding shows t-test independent sample for gender difference among teachers in Continuous assessment in teaching biology, with p-value is 0.045, degree of freedom is 238, t- calculated value is 2.02. The finding shows that the female teachers with the mean value of 30.76 is greater than the male teachers with the mean value of 29.13. This implies that gender difference has significant impact among teachers in Continuous assessment in teaching biology. The result revealed that there is significant impact of gender difference among teachers in Continuous assessment in teaching biology. This is in line with Erdogan & Stuessy, (2016) who observed female science teachers' views on continuous assessment and traditional assessment. The result shows that the impact of teacher gender continuous assessment is often context-dependent and influenced by cultural norms.

Impact of academic qualification difference in continuous assessment among teachers in teaching biology

Table 6: One-way ANOVA for teacher's academic qualification Difference in Continuous Assessment in teaching biology

	Sum of Squares	DF	Mean	F-cal.	P-Value
Between Groups	3482.038	4	870.510	39.920	.000
Within Groups	5015.425	236	21.806		
Total	8497.464	240			

Source: Field survey, F - 39.920, DF 240, p<0.05

Table 7: Scheffe Post-hoc Analysis of Biology teachers' qualification differences on Continuous Assessment in teaching biology

(I) Teachers' Qualification	(J) Teachers' Qualification	Mean Difference (IJ)	Sig.
BSc	Masters	-11.96667*	.000
	PhD	-20.70000*	.000

Table 6 and 7 shows one-way ANOVA and post-hoc analysis for difference between teachers' difference academic qualification on continuous assessment in teaching biology. From the finding using two tailed test at the significant level of 0.05, the p-value is 0.000, degree of freedom is 234, and F-value is 39.920. The p-value of 0.000 is less than 0.05. This means, the hypothesis is rejected. Therefore, there is significant impact between teachers' academic qualifications on continuous assessment in teaching biology.

The result also indicated there is significant impact between teachers' academic qualifications on continuous assessment in teaching biology. This is in agreement with Brookhart, (2011); Lietz & Csapó, (2016) who observed educational assessment knowledge and skills for teachers and assessment and classroom learning assessment in education. The results show that educators with higher academic qualifications are often better equipped to design assessments that align with curriculum goals and are psychometrically sound. They may also possess a deeper understanding of assessment theory and practice, which can lead to more effective use of continuous assessment methods. Also, this finding agreed with the work of Onuka (2005) whose finding revealed that the graduate teachers implement continuous assessment with success compared with the non- graduate teachers. This is an indication of education discipline. *Impact of teacher's year of experience difference in continuous assessment among teachers in teaching biology*

	Sum of Squares	DF	Mean Square	F-cal.	P-Value
Between Groups	418.485	3	139.495	3.989	.009
Within Groups	8078.979	237	34.974		
Total	8497.464	240			

Source: Field survey, F = 39.920, Df 240, p<0.05

Table 9: Scheffe Post-hoc Analysis of Biology teacher's year of experience difference in continuous assessment

I (Academic Qualification)	J (Academic Qualification)	Mean Difference (I-J)	Sig.
<1	1-10	-11.00000*	.005
	11-15	-21.80000*	.000
	>20	-32.50000*	.000

Table 8 and 9 shows one-way ANOVA and post-hoc analysis for teacher's year of experience difference in continuous assessment among teachers in teaching biology. From the finding using two tailed test at the significant level of 0.05, the p-value is 0.009, degree of freedom is 240, and F-value is 3.989. The p-value of 0.009 is less than 0.05. Hence, the null hypothesis of there is no significant impact of teacher's year of experience difference on continuous assessment among teachers in teaching biology is hereby rejected. This means, there is significant impact of teacher's year of experience on continuous assessment among teachers in teaching biology between those with <1 year, 1-10 years, 11-20 years and > 20 years of working experience. The finding further revealed that there is significant impact of teacher's year of experience on continuous assessment among teachers in teaching biology between years of working experience. This finding agreed with the finding of Forslund et al., (2017) who observed exploring how experienced teachers design and implement assessments for learning. The result show that experienced teachers tend to be more skilled in designing and implementing continuous assessment methods, adapting assessments to student needs, and providing constructive feedback. Also, Guskey, (2015) observed teacher evaluation. The result shows that the relationship between years of experience and continuous assessment effectiveness may not be linear, as there is a potential for experienced teachers to become entrenched in their assessment practices and resistant to change.

5.0 Conclusion and Recommendation

Based on the findings of the study, the following conclusions were drawn: (1) Gender difference has significant impact among teachers in Continuous assessment in teaching biology; (2) There is a significant impact between teachers' academic qualifications on continuous assessment in teaching biology; (3) There is a significant impact of teacher's year of experience on continuous assessment among teachers in teaching biology between years

of working experience. Based on the findings and conclusion, the following recommendations are advanced; (1) Encourage and support female biology teachers in their efforts to administer assessments, adapt teaching methods, and provide feedback to students. Recognize and promote their contributions to continuous assessment. (2) Provide ongoing support and mentoring to teachers, especially those with lower academic qualifications or less teaching experience, to help them improve their continuous assessment practices. (3) Encourage biology teachers to stay informed about current research to enhance their teaching experience and best practices in assessment and teaching biology.

REFERENCES

Adeloye, T and Alhamdu, J.E. (2005). Measurement and Evaluation: Debis Co. Press

Afolala, A.O.A. and Babajide. (2013). Examining attitude toward continuous practice among Nigerian among Nigerian pre-services STM teachers. Journal of Education and Practice. Vol.4. No.13

Ajuar, H. N. & Okandeji, C. O. (2007). Problems Associated with Implementation of Continuous Assessment: Primary School Teachers' Perception. In Journal of Teacher Perspective,1 (3), 545-555.

Akindele, O. A. (2003). Craftsmen and labour productivity in the Swaziland construction industry. EIDB 1st postgraduate conference, University of With water sand, Port Elizabeth, South Africa.

Alaebo,H.O. (2005). An Evaluation of Continuous Assessment Practice in Senior Secondary Schools in Kano State. Unpublished M.Ed Dissertation submitted to the Department of Education, Bayero University Kano.

Andrew, A.N. (2000). Institutional Curriculum for Effective Teaching in University Education Bi-Shannn Publishing Kaduna p194

Ango, A.L. (1994) Predictive Validity of Continuous Assessment for Performance in NCE in F.C.E, Zaria. An Unpublished M.Ed Thesis. Department of Education, A.B.U. Zaria.

Bajah, S.T. (1984). The National Policy on Education and

Continuous Assessment in WASC Chemistry Implementation for Curriculum Development in Nigeria, Paper Presented at Science Teachers Association of Nigeria Chemistry Panel Workshop Jos.

Barclay, K. and Breheny, I. (2001). Hey; Look Me Over Assess: Evaluate and Conference with Confidence Childhood Education 70(4). 30.

Black, P., & Wiliam, D. (1998). Assessment and classroom learning. Assessment in Education: Principles, Policy & Practice, 5(1), 7-74.

Brookhart, S. M. (2011). Educational Assessment Knowledge and Skills for Teachers. Educational Measurement: Issues and Practice, 30(1), 3-12.

Byabato, S. and Kisamo, K. (2014). Implementation of School Based Continouus Assessment (CA) in Tanzania Ordinary Secondary Schools and Its Implication on the quality of education. Journal of Developing Country Education. 4(6).

Dejene, W. (2019). The practice of modularized curriculum in higher education institution: Active learning and continuous assessment in focus. Cogent Education, 6(1),

Denga, D. (1983.) Guidance and Counseling for 6-3-3- 4 system of Education Savanna Press Limited.

Erdogan, F., & Stuessy, C. (2016). Female science teachers' views on continuous assessment and traditional assessment. International Journal of Educational Science and Research, 6(1), 31-36.

Eremina, A.H.I & Reginald, U.P.I (2016). Effect of Assessment for Learning (AFL) on Biology Academic Achievement of Senior Secondary Students in Rivers State. European Journal of Educational and Development Psychology Vol.4, No.2, pp.12-24, April 2016.

Falayajo, W. (1981). Genesis of the Idea of Continuous Assessment conference Paper University of Ibadan,

Ibadan Nigeria.

Federal Ministry of Education, National Policy on Education 2013 (5th ed) NERD Publisher.

Federal Ministry of Education, Science and Technology. (1985). Handbook on Continuous Assessment Ibadan Heinemann.

Federal Republic of Nigeria (2004). National policy on education (4th edition): NERDC Press

Federal Republic of Nigeria (2004). National policy on education (4th ed.). Abuja: NERDC.

Federal Republic of Nigeria (2004). New National Policy on Education Abuja NERDC press.

Federal Republic of Nigeria. (1998). New National Policy on Education Abuja NERDC press.

Flick. (2002). An Introduction to qualitative research, Evans publishers.

Forslund Frykedal, K., & Hammar Chiriac, E. (2017). Exploring how experienced teachers design and implement assessments for learning. Assessment & Evaluation in Higher Education, 42(2), 275-290.

Gorard, S., Smith, E., & May, H. (2012). Review of gender differences in learning styles: Suggestions for practice and research. Improving Schools, 15(1), 69-88.

Guskey, T. R. (2015). Teacher Evaluation: What's Wrong with It and How to Fix It. Teachers College Press.

Hassan, H. and Adeyanju, C.A. (1998). The Predictive Validity of Continuous Assessment in Senior Certif icate Examinations. Nigeria Teacher Today:Journal of Teacher Education 6(1), 174- 179.

Hassan, H.O. (1995) Predictive Validity of Continuous Assessment for performance in Senior School Certificate Examination. Unpublished M.Ed thesis Ahmadu Bello University, Zaria.

Holmes, N. (2015). Student perceptions of their learning

and engagement in response to the use of a continuous e-assessment in an undergraduate module. Assessment & Evaluation in Higher Education, 40(1), 1–14. doi:10.1080/0260293 8.2014.881978

Idowu, A.I & Esere, M.O. (2009). Assessment In Nigerian Schools: A Counsellors' viewpoint. Edo journal of counselling, 2(1).

Ijaiya, N.Y.S. (2002). Conducting Examinations in Nigeria Universities: A managers Perspective. Journal of Curriculum and Instruction 6 (1 and 2) 1.

Ipaye, B. (1995). An evaluation of continuous assessment in schools. Education today

Iqbal, M. (2017). Effect of Continuous Assessment Techniques on Students' Performance at Elementary Level. Bulletin of education and research, Vol. 239 (1), pp. 91-100

Lewis, A.C. (1997). Changing education, changing curriculum Education digest 12-17.

Lietz, P., & Csapó, B. (2016). Teachers' attitudes towards formative assessment and its relationship to quality of instruction. Studies in Educational Evaluation, 49, 43-53.

Lithosselliti, L. (2003). Using focus groups in research London: continuum.

Maduabum, M. (2009). Teaching biology effectively (2nd Ed). Jos: University Press.

Meab . F. (2008). The challenges of implementing continuous assessment oral assessment in EFL classes with References to Dedrebirham Teachers' College Unpublished Thesis Submitted to the Department of Education University of Tanzania.

Moses, K., & Emily, G. (2011). Quality or mere formality? Food for thought in the use of teacher-made test in Masvingo rural secondary schools in Zimbabwe. Journal of Emerging trends in Educational research and Policy Studies (JETERAPS), 2(6), 18425.

National Education Ministry (1996). Curriculum Framework for

General and Further Education and Training, Pretoria Republic of South Africa.

National Examinations Council (2001). Reports of School Accreditation for the Senior School Certificate Examination. Minna (Nigeria): Author.

National Teacher's Institute (2006). Basic Assessment in Primary School. Manual for the Re-Training of Primary School Teachers. A Millennium Development Goals project (M.D.G) published by N.T.I Kaduna.

Ndudi, E. (2001). Cognitive and non-cognitive assessment in education. Century publisher

Nitko, A.J. (1994). Curriculum Based Criterion Referenced Continuous Assessment. A paper presented at the international meeting of the association for the study of educational evaluation Pretoria South Africa.

Nneji, L.M. (2012). The attitude of some Nigerian Science, Technology and Mathematics Trends towards assessment practices. International Journal of Mathematics Trends and Technology. Vol. 3 No.3.

Nweaze, I. (1998). The Relationship between Dimensions of students' motivation and science achievement in senior secondary schools of Abia state Nigeria Unpublished Med thesis Ahmadu Bello University Zaria.

Obanya, P. (1979). Improving Science Teaching and Learning through Continuous Assessment. In Journal of STAN, Vol. 18 (1), pp22-27.

Obioma, O. (2011). Continuous Assessment of Primary and Junior Secondary School Teachers in Journal of Nigeria Educational Research and Development Council (NERDC). 1-7. Retrieved from http//www. continuousassessmentpractices innigeria on 21/5/2011.

Oguneye, W. (2002). Continuous Assessment: practice and prospects. Lagos; providence publishers.

Ogunnniyi, M.B. (1984). Educational measurement and evaluation. Longman

Ohuche, R.O. (1 988). Continuous

Assessment for Every Learner Onitsha Africana Fep Publishers LTD.

Ohuche. (1998). Continuous Assessment for every learners. Nigeria Africa.

Okebukola, P.A. and Jegede J.O. (1986). The Under Achieving Students in Science Option on the Etiology of Ailment. Journal of Science Teacher's Association of Nigeria 22(1,), 26-30.

Okpala, P.M. (1999). Measurement and evaluation in education, stycing.

Okwo, F. A. & Tartiyus (2004). Effects of position diagram and cognitive style in biology achievement of pre-national diploma students. Journal of Sciences Teachers Association of Nigeria, 39(2), 89-93.

Olomolaiye, F. (1992). Continuous assessment in Nigerian educational system. A paper presented at the international curriculum conference, University of Jos, Jos.

Onuka, A.O.U. (2005). Continuous Assessment as an Instrument of Achieving Learning Objectives. A paper presented at the Annual Conference of the International Association for Educational Assessment at Abuja Nigeria.

Opara, I.M, Onyekuru, B.U & Njoku, J.U (2015). Predictive Power of School Based Assessment Scores On Students' Achievement in Junior Secondary Certificate Examination (JSCE) In English and Mathematics. Journal of Education and Practice ISSN 2222-1735 (Paper) ISSN 2222-288X (Online) Vol.6, No.9, 2015

Osuji. G. (2010). Continuous assessment in primary schools. Lagos Nigeria www.iaca. Info/documents/ papers2fb222d82.pdf

Rai, C. (2019). Teacher's Perception of Continuous Assessment System at Basic Level. Molung Educational Frontier, 9, 55-64.https://doi.org/ 10.3126/mef.v9i0.33585

Sarajini, T. R. (2010). Modern biology for senior secondary

schools. Ibadan: Africa FEP Publisher Limited.

Shukla, A. (2019, June12). Continuous Assessment-Features and purpose. https://www.toppr.com/bytes/continuous-assessment-features-and-purpose/

Turton, P. (1983). Continuous Assessment System: Practical System for Schools. The Northern Nigeria Publishing Company.

Yoloye, C.A. (1988). "Continuous Assessment Tests Scores, Process and Procedure". A paper presented at National workshop on transition from Junior to senior secondary School. Held at University of Ilorin, Jun 6-10.

Yoloye, E.A. (1984). Continuous Assessment a Simple Guide for Teachers. Printed in Great Britain by Biddies and Guitford.