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An Appraisal of the Perception of Continuous Assessment Practice Among Secondary School Science Teachers in Ondo State South/West Nigeria

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ABSTRACT

This study explores the perception of continuous assessment practices among secondary school science teachers. Continuous assessment is recognized as a valuable tool for enhancing teaching and learning outcomes by providing ongoing feedback and identifying student's strength and weaknesses. However, there are challenges and misconceptions surrounding its implementation. Through a comprehensive appraisal, this study examines teacher's perspectives in terms of gender, qualification, school type and experience. One of the findings revealed that, there is no significant difference between the perceptions of male and female science teachers on continuous assessment etc. The study offers recommendations for targeted professional development, curriculum alignment, standardization, supportive policies and collaborative practices to enhance the perception and practice of continuous assessment among secondary school science teachers. Implementation of these recommendations has the potential to improve the quality of science education and students learning outcomes.

Keywords: Perception, Science Teachers, Cognitive, Affective, Psychomotor.

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1. INTRODUCTION

Continuous assessment is an integral part of education system, providing valuable insights into students learning progress and enabling education adapt their teaching methods accordingly. Teachers' perceptions of continuous assessments can significantly impact the effectiveness and implementation. Continuous assessment no doubt plays vital roles in an educational system and its results are used for a multiplicity of purposes viz: selection, appraisal and classification of instructional objectives, diagnosis of students' strength and weakness among others. Federal Ministry of Education, Science and Technology (1985) stated that Continuous assessment is systematic cumulative, comprehensive and guidance oriented and this characteristic have implication for teaching-learning process. Continuous assessment should be well and objectively planned to evaluate student's performance on a series of assessment task. In addition, it should involve more time and also provide opportunity for feedback and a comprehensive assessment of the objectives to be achieved and competences to be assessed. Continuous Assessments is an integral part of the teaching process.

Continuous assessment is not continuous testing of the cognitive ability of students whereby the effective and psychomotor domains are neglected. The purpose of continuous assessment is to assess the totality of the learner and the teaching learning setting, in other words it should focuses on the intellectual affective and psychomotor. It is therefore necessary that the teachers should ensure proper assessment of pupils in school from time to time. Continuous assessment is also continuous updating of teacher's judgement about the learner's performance in relation to specific criteria which will allow for a cumulative judgement to be made about his/her performance. This agrees with some of the numerous advantages of continuous assessment identified by Mangal (2013), Okole (2005).

Some of the advantages of continuous assessment that were enumerated include among others as contained in Akanni & Odofin (2015) are creating situation for students to make adequate use of the time for students by completing notes, doing homework and assignments. It therefore motivates students to study more frequently and effectively for long retention as oppose to last minute cramming for examinations. Hence there will be a sharp reduction in failure rate and examination malpractices. Its appraisal technique which systematically covers all the student's performance in class tests, home assignment, projects and other school activities during a given school activity such as term, semester, duration of course.

Assessment should be periodically carried out throughout every term, semester and year right from when the students entered the school until he finally leaves. The various assessment tools include teacher made test, home assignments, projects, practical, examinations, observations, records, autobiographic, self-reports, interviews, questionnaires, behaviour rating scale and other psychological tests. At the post-secondary school level continuous assessment is very much similar to course work as opposed to a single sessional or final examination. Continuous assessment generally is seen to possess many characteristics according to Akanni & Odofin (2015).

- i. Comprehensive: It is aimed at assessing the total development of the students along the three domains and utilization of various assessment techniques
- ii. Remedial: that is correction of past failures.

- iii. Prognostic: the information obtained during the diagnosis could be used to predict how well the child performed on similar tasks or even a completely different tasks in the failure.
- iv. Diagnostic: this involves continuous monitoring of student's progress to identify each child's strength and weakness.
- v. Guidance Oriented: The information so obtained about each student is employed in guiding him for better self-understanding and towards better future development.
- vi. Cumulative: It require the accurate keeping of up-to-date assessment records about each student's.

In the course of implementing the continuous assessment programme, Obe (1980) opined that some educational inspectors, principals, teachers, parents and students generally did not like the change in the mode of our educational value to continuous assessment practice in that it gives more work for the principals, teachers, parents, students, and that students did not fully understand the continuous assessment concept and that finance which was required to provide the necessary materials for the successful implementation of the programme in the various schools was not provided by the government. The school principals therefore come up with two periodic test per term for the continuous assessment these periodic test were similar in every way to the end of the term examination where all students in a school wrote Tests according to a prepared timetable for one week. The score obtained by students in each of these, formed part of the student's final assessment score for the term in every respective subject however continuous assessment if properly administered would make students work harder, reduce the rate of examination malpractices while teachers become more innovative.

Adebule and Ayodele (2005) affirmed that parents and guardians even go to the extent of arranging for their children and wards in order to have better assessment value. Emeka in Bandele and Ayodele (2015) highlighted the objectives of continuous assessment. Each of the objectives has implications for the practice of continuous assessment in our schools, these objectives include:

- i. Regular assessing of the students and the proper recording of scores from such assessment.
- ii. Meticulous record keeping of every facet of the student's life while in school.
- iii. Testing of the three major domains cognitive, affective and psychomotor domains of the students.
- iv. The identification of students' difficulties and the re-teaching of such difficult topics.
- v. Giving of feedback to teachers so as to enable them assess their own performance.
- vi. Identification of the personality of each student including to temperament, interest, attitude and so on.
- vii. Provision of guidance and counselling to the help students in their learning as well as career development and adjustment.
- viii. The use of a variety of evaluation techniques.
- ix. Using all the scores in all the tests (cognitive, affective & psychomotor) for the final grading and placement of each student.
- x. Setting up of continuous assessment committee in schools.

The Practice of Continuous Assessment in Nigeria.

Okafor (2001) said the practice of continuous assessment in Nigeria provided for the National Policy on Education as a way of improving the evaluation process has been relegated to the background by the teachers who have no time for the exercise. Kolawole (2005) reported that continuous assessment scores spread across the three years, as continuous assessment scores take certain percentage of the overall score. Moreover, in recent times the situation is worse, the ratio of continuous assessment marks and final extermination marks according to Okafor (2001) vary from one school to another ranging from 10:90 through 30:70 to 50:50. A federal committee headed by Prof Yoloje on continuous assessment describe traditional assessment method as a type which is usually external or internally administered and which relies very usually on testing or examining towards the tail end of educational programme and takes account of mostly knowledge of students (Odetola, 2005). Thus in essence, this method was generally based on the result of an end of year examination which was used for making decision on the student. Thus the need for a new system of assessment and evaluation was strongly advocated.

Yoloje (2009) defines continuous assessment as a method of evaluating the progress and achievement of students in educational institutions, its aim is to get the true possible picture of each students, ability, at the same time helping each student to develop his/her abilities to the fullest while Okonkwo (2002) defines continuous assessment as a method of evaluation in which learners achievement in the cognitive, affective and psychomotor domains from the moment they become learners until the end of it are determined using scores obtained from various instruments and techniques such as test, projects, rating scale, checklist, observation, Interviews and other possible techniques. The National Policy on Education (1984) mandated teachers to conduct continuous assessment for students at all levels of our educational system. Continuous assessment carries a significant percentage of the final assessment score of students in all Nigerian tertiary institutions. Its weight range between 30% (in Universities) to 40% (in Colleges of Education). While final semester carries 70% and 60% respectively. A science teacher is expected to organize and conduct test, give assessments and project consider attendance at lectures and tutorials, supervise and keep records of laboratory and field practical.

Each institution has got a unique way of awarding specifics marks to each of those mentioned areas in the final compilation of continuous assessment. At the secondary school level, the internal assessment is derived mainly from scores which students obtained from teacher made tests given to students in the classroom. The tests were given to students at periodic intervals for the purpose of obtaining the continuous assessment scores. Enormous importance is placed on continuous assessment scores in the National educational system. The policy also entrusted esteemed responsibility on teachers (at all levels) to contribute towards certification of their students. Teachers are the pivot on which the success of any educational advancement rests. According to Ayodele (2002) teachers are the ones to translate educational policies into action in the classroom. The success or failure of any educational policy depends on teacher's implementation strategies and how effective they are in implementing the policy. Therefore, it can be said that teachers are indeed pillars of education.

Reasons for Continuous Assessment

The continuous assessment procedure is predicated on certain basic principles, according to Ojerinde and Falayeyo (1984), federal ministry of Education Science and Technology (1985) and Majasan (1988) as found in Bandele & Ayodele (2015) that:

1. Nigeria and indeed many blest African countries have been plagued with the occurrence of examination leakages and other malpractices especially in the blest African school certificate examination.
2. Teacher needs to access his/her own instructional methods from time to time in order to improve his/her performance. Data from continuous assessment can be useful to the teacher for such assessment.
3. An important aspect of instruction is the appropriate guidance of the child both in his/her learning and preparation for a career'. Continuous assessment facilitates such guidance in a school.
4. The readiness of teachers to introduce innovations into their teaching is often frustrated by the fact that a final examination does not take account of such innovations. In a continuous assessment situation, the teacher's assessment of the performance of students on such innovation can become a part of the final assessment. The teacher should therefore be encouraged to be flexible and innovative.
5. Assessment is an integral part of the teaching process and therefore the teachers should be involved in the final assessment of the pupils he or she has taught.
6. The learner's performance throughout the entire period of schooling is likely to be more valid and serving as his overall ability than a single examination.

This research aims to explore the perceptions of secondary school science teachers regarding continuous assessment with a focus on teacher's experiences, school differences, gender and class of degree.

2. LITERATURE REVIEW

Continuous assessment is an integral part of education system, providing valuable insights into students learning progress and enabling education adapt their teaching methods accordingly. Teachers' perceptions of continuous assessment refers to the ongoing evaluation of student's performance and learning progress throughout an academic team or year. It involves various assessment methods, such as quizzes, assignments, projects and class participation to provide a comprehensive view of student's abilities. Continuous assessment refers to the ongoing evaluation of student's performance and learning progress throughout an academic team or year.

It involves various assessment methods, such as quizzes, assignments, projects and class participation to provide a comprehensive view of student's abilities. Clement & Ayibatonye (2014) revealed that the major problem or factor causing the indifference to the implementation of Continuous assessment in secondary schools is that science teachers lack the basic skills and rudimentary training in test construction and administration (Alansa, 2003). A study conducted in Pakistan on the role of continuous assessment in shape of weekly tests and assignments on the academic achievement of students by Ali, Sultana & Marwat (2010) said assessments in education in Pakistan had the potential to improve learning and certain steps has to be taken in order to realize its full potential. Omebe (2014), reported that an assessment procedure which takes into account the learners performance throughout should be considered.

Abonyi, Okereke and Omebe (2005) defined Continuous assessment as a method of assessment which the teacher periodically or intermittently ascertains what the learners has gained in terms of knowledge, thinking, reasoning, character learning activities using various instruments like tests, assignments, projects, observation, interviews and questionnaires. Continuous assessment if properly executed can encourage the total development of the child, enhance the study habit, fear of failure on the part of the students will be reduced; it also curb examination malpractices, credibility of student's result, finally teachers and students and the school performance can be assessed Boris (2016). Olubukola & Bankole (2015) concluded by saying the teachers have high attitude towards the adoption of continuous assessment and that in service teachers have high preference for the adoption of continuous assessment than the student teachers. Assessment also has to do with the involvement of the variety of instruments. In so doing, information would be generated from a variety of situation and so, result in a more complete, and hence more valid, impression of the students.

Science Teachers and Continuous Assessment

Science education is the pivotal in shaping students understanding of the world around them and fostering critical thinking skills, Continuous assessment an ongoing process of evaluating student learning plays a crucial role in enhancing teaching effectiveness and student achievement. In this context, science teachers serve as facilitators of learning, guiding students through the scientific inquiry processing while continuously assessing their progress and understanding. Continuous assessment in science education allows teachers to gauge students understanding and reinforce learning. It also encourages active student engagement and promotes a deeper understanding of scientific principles. Science teachers employ various assessment methods to evaluate students learning continuously. These methods include formative assessments such as quizzes, discussions and laboratory activities as well as summative assessments like tests and projects.

Additionally, science teachers may use alternative assessment strategies such as portfolios, presentations and peer evaluations to provide a comprehensive picture of student achievement (NRC, 2012). Ruiz-Primo & Furtak (2007) stated that science teachers play a multifaceted role in continuous assessment, serving as mentors, facilitators and evaluators. They create a supportive learning environment where students feel comfortable exploring scientific concepts and asking questions. Through differentiated instruction, science teachers address the diverse learning needs of their students and promote equity and inclusion in the classroom. Moreover, science teachers use assessment data to inform instructional decisions, adjust teaching strategies and monitor student progress overtime.

Continuous assessment provides a more holistic view of student's progress in science, allowing for timely interventions to teaching strategies (William, 2011). While continuous assessment is valuable, it can be time consuming to administer and grade, potentially taking away from valuable instructional time, Black and William (1998), another view expressed by Heritage (2010) said continuous assessment fosters ongoing engagement with scientific concepts, encouraging students to stay actively involved in their learning. Through continuous assessment, we can provide students with timely feedback that guides them toward improvement, emphasizing the process of learning over just the final outcome (Ajogbeje, 2012, Sadler, 1989). Maintaining consistency and standardization in continuous assessment practices across different classrooms and teachers can be a challenge impacting the reliability of assessment outcomes (Brookhart, 2011).

After more than three decades, there is still lack of understanding of continuous assessment and thus the process of continuous assessment seems not to be functioning well in schools. The practice is still judgmental and records not well secured, which give room for threat factors in education. Continuous assessment in practice is expected to embody the global changes that affect the very nature of the classroom process, bringing it away from education as only the information recall and toward the full development of learner's potential.

The paper therefore investigates the indifferences in the perception of science teachers to continuous assessment in secondary schools in Nigeria. The National Policy on Education (1984) recognizes the unique position of science teachers in terms of building the scientific and technological manpower of any nation and hence the most crucial inputs of an educational system. Therefore, there is the need to find out the perceptions of science teachers on whether the utilization of continuous assessment test can enhance or still enhancing the improvement of educational system in general and student's performance in particular (Ajogbeje, 2023a). The following research questions and hypotheses were generated and formulated to guide the study

Research Questions

- How does teacher's perception of continuous assessment in secondary schools differ between public and private institution?
- Does teacher's year of teaching experience influence their perceptions of Continuous assessment?
- Do gender influence science teachers perceptions of Continuous assessment?
- Do graduate and non-graduate teachers have same perceptions of Continuous assessment?

Research Hypotheses

- There is no significant difference in science teacher's perceptions of continuous assessment between public and private secondary school's science teachers.
- There is no significant difference between science teacher's years of teaching experience and their perception of continuous assessment.
- There is no significant difference between graduate science teacher's perceptions and non-graduate science teacher perceptions of continuous assessment.
- There is no significant difference between the perceptions of male and female science teachers on continuous assessment.

3. MATERIALS AND METHODS

Research Design

This study employed a survey research design to gather a comprehensive understanding of the perception of continuous assessment among science teachers.

Participants

The target population consisted of all the science teachers from secondary schools including public and private institutions in the South West geopolitical zone of Nigeria. A total of one hundred and sixty (160) science teachers in senior secondary school two (SSII), that is Biology, Chemistry and Physics teachers using stratified random sampling technique and school type, qualification, gender and years of experience as stratified variable were randomly selected as participants.

Research Instrument

A structured research questionnaire was administered to collect quantitative data on teacher's perceptions of continuous assessment. This questionnaire used likert scale items and close-ended question. It was validated by professionals in science education and tests and measurement for face and content validity. The reliability of the instrument was determined using the internal consistency method. The instrument was tested among thirty (30) senior secondary school two (SS2) science teachers comprising Biology, Physics and Chemistry teachers. The internal consistency was established by applying split-half techniques on test results obtained, Pearson product moment correlation formula was used and Spearman Brown prophecy formula. The yielded reliability coefficient of 0.85 was obtained which was high enough for a research.

Data Analysis

Data collected were analysed using frequency, percentage and t-test statistic.

4. RESULTS

Question 1: What is the general perception of science teachers about Continuous assessment practice?

Table 1- General perception of science teachers about Continuous assessment practice.

Perception level	Frequency	Percentage
Low perception	55	34%
High perception	105	66%
Total	160	100

The result reveals that majority of the science teachers indicated high perception about what proper Continuous assessment practice in school should be while the remaining 55 teachers 34% have low perception of continuous assessment. Continuous assessment is a part and parcel of instructional process that has to be taken as a serious tool in educational quality reassurance endeavor. There is a discrepancy between the perceived purpose of a continuous assessment and its actual practice; the submission and research findings from some of these scholars give an insight for more research effort on the continuous assessment practices among science teachers.

Research Hypothesis I: There is no significant difference in science teacher's perceptions of continuous assessment between public and private secondary school's science teachers.

Group	N	Mean	SD	df	t-cal	t-tab	Result
Private	96	24.13	10.62	158	3.85	2.00	Rejected
Public	64	15.94	7.53				

*P<0.05 (Result significant at 0.05 level). *=Significant.

The table shows that science teachers in private had a mean of 24.13 and a standard deviation of 10.62 while science teachers in public schools had a mean of 15.94 with a standard deviation of 7.53 further results showed that t-cal of 3.85 which is greater than the table value of 2.00, the null hypothesis is rejected showing that there is a significant difference between the two groups.

Research Hypothesis 2: There is no significant difference between science teacher's years of teaching experience and their perception of continuous assessment.

Group	N	Mean	SD	df	t-cal	t-tab	Result
1-10 years	90	12.69	10.23	1.58	1.83	2.00	Not Rejected
10-20 years	70	18.25	8.42				

$p > 0.05$ (Result not significant at 0.05 level), NS= Not significant.

The table shows that the group (1-10) years had a mean of 12.69 and a standard deviation of 10.23 value group (10-20) had a mean of 18.25 with a standard deviation of 8.42 further result showed that t-cal of 1.83 is less than t-table of 2.00 hence the null hypothesis is not rejected. This showed that there is no significant difference between science teachers' years of teaching experience and their perception of continuous assessment.

Research Hypothesis 3: There is no significant difference between graduate science teacher's perceptions and non-graduate science teacher perceptions of continuous assessment.

Group	N	Mean	SD	df	t-cal	t-tab	Result
Graduate	85	18.72	13.25	1.58	2.05	2.00	Rejected
Non-Graduate	75	21.64	11.23				

$P < 0.05$ (Result significant at 0.05 level). *=Significant.

The t. table showed that graduate teachers had a mean of 18.72 and non-graduate had a mean of 21.64 with a standard deviation of 13.25 and 11.23 respectively, further result showed that t-cal. Of 2.05 is greater than t-table of 2.00, hence the null hypothesis is rejected, which implied that there is significant difference between graduate teacher's perceptions of continuous assessment and non-graduate teachers.

Research Hypothesis 4: There is no significant difference between the perceptions of male and female science teachers on continuous assessment.

Group	N	Mean	SD	df	t-cal	t-tab	Result
Female	83	20.69	12.25	1.58	1.98	2.00	Not Rejected
Male	77	19.63	9.42				

$p > 0.05$ (Result not significant at 0.05 level), NS= Not significant.

The table showed that Female science teachers had a mean of 20.69 and a standard deviation of 12.25 while Male science teachers had a mean of 19.63 with a standard deviation of 9.42 further results showed that the t-calculated of 1.98 is less than the table value of 2.00 hence the null hypothesis is rejected, showing that there is no significant difference between male science teachers and female science teachers perception of continuous assessment.

5. DISCUSSION

Research hypothesis seeks to find significant difference between private and public schools as shown in the table when the perception of teachers in private and that of the public schools were statistically compared. There exists significant difference between perceptions of teachers in public schools.

Consequently, the null hypothesis which state that there is no significant difference in teacher's perception on continuous assessment between public and private secondary school science teachers was rejected.

Research hypothesis two seeks to find out if any significant difference exists between the perceptions of science teachers based on their years of experience on continuous assessment practices. As shown in table 2, the hypothesis was not rejected, showing that there is no significant difference between science teachers' years of teaching experience and then perception of continuous assessment. The hypothesis three seek to find out whether or not there is no significant differences in graduate teachers perceptions and non – graduate teacher's perception, here the null hypothesis was rejected showing significant difference between the two groups.

While, group 4 showed no significant difference between the perception of male science teachers and female science teachers. This research revealed that majority of the teachers have high perception about proper way of Continuous assessment practice in our senior secondary schools in south-west Nigeria. The finding supported that of Umar (2015) that stated that continuous assessment positively impacted student's performance in a case study of selected school in Sokoto.

The result of research question 2 showed significant difference showing that the perception of continuous assessment by science teachers in private schools differ from science teachers in public schools, this could be as a result of a different ways they use in conducting a Continuous assessment, some based their implementation only on cognitive alone without giving importance to effective and psychomotor so also the findings on school type here is in line with Adeyemi et al (2016), who found significant differences in the perceptions of continuous assessment between teachers in private and public junior secondary schools.

Findings from research questions showed no significant difference between the group of 1-10 years teaching experience and 10-20 years teaching experience. This showed that teaching experience is not a significant determinant of the perception of Continuous assessment practice in school. This may be due to the fact that the two groups of teachers hence the same privilege of conducting continuous assessment for their pupils.

The result of research question 4 showed significant difference in perception of continuous assessment of science teachers that are graduate and those that are not graduate. This could be as a result of better and higher knowledge exposed to by the graduate teachers than non-graduate teachers. Research question 5 showed no significant difference between male science teachers and female science teacher. This could be that both (male & female) are trained in the same rudiment of continuous assessment and are quite aware of what continuous assessment meant for the students in terms of getting good results.

6. CONCLUSION

In conclusion, this appraisal has shed light on the perception of continuous assessment practices among secondary school science teachers. It is evident that while there is recognition of the importance of continuous assessment in enhancing teaching and learning outcomes, there are also challenges and misconceptions that need to be addressed. Teachers appreciate the potential of continuous assessment to provide timely feedback, identify student strengths and weaknesses and inform instructional decisions. Despite these challenges, there is an opportunity for professional development initiatives, collaborative efforts among educators and supportive policies to improve the implementation and perceptions of continuous assessment in secondary school science education.

7. RECOMMENDATIONS

Based on the findings of this appraisal, several recommendations can be made to enhance the perception and practice of continuous assessment among senior secondary school science teachers:

1. Professional development: Offer targeted professional development programs to equip teachers with the necessary skills and knowledge to effectively implement continuous assessment practices. This should include training on assessment design, rubric development and data analysis technique.
2. Curriculum alignment: Ensure that continuous assessment practices are aligned with curriculum goals and learning objectives. This alignment will help to validate the assessment process and ensure that it accurately reflects student learning outcomes.
3. Supportive policies: Advocate for supportive policies at the institutional and governmental levels to reduce the administrative burden associated with continuous assessment. This may include allocating resources for assessment materials, providing release time for assessment activities and recognizing the value of continuous assessment in teacher evaluations.
4. Standardization and quality assurance: Develop guidelines and standards for continuous assessment practices to promote consistency and fairness across schools. This could involve the development of standardized assessment tools and protocols for moderation and validation.
5. Collaborative and sharing best practice: Encourage collaboration among teachers to share best practices, resources and experiences related to continuous assessment.

By implementing these recommendations, stakeholders can work towards improving the perception and practice of continuous assessment among secondary school science teachers, ultimately enhancing the quality of science education and student learning outcomes.

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