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Knowledge of Formative Assessment Practices of Teachers in Public Senior Secondary Schools in Edo Central Senatorial District, Nigeria

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Abstract:- This study assessed knowledge of formative assessment practices of teachers in public senior secondary schools in Edo Central Senatorial District, Nigeria. Two research questions were raised and one hypothesis was formulated and tested. This study adopted the descriptive study design. The population of the study covers the six hundred and sixteen (616) Secondary School teachers in all the public secondary schools in Edo Central Senatorial District. The simple random sampling technique was used to select 125 subject head teachers who are drawn as the representative sample to measure teachers' competence. These subject head teachers cover language subject head teachers, Science subject head teachers, and Art subject head teachers in schools. The instrument was 20-item survey questionnaires on formative assessment practices of teachers. The test-retest reliability coefficient produced an r-value of 0.78 which shows that the instrument is reliable. Research question one was analysed using mean ($\bar{X}$) while the independent t-test for two sample means was used to test the hypothesis at 0.05 level of significance. Findings revealed that knowledge of formative assessment practices among public junior secondary school teachers in Edo Central Senatorial District, Nigeria is poor and female teachers had higher level of formative assessment practice than male teachers in secondary schools in the district. It was recommended that the government should concentrate more on exposing teachers to more practical ways of creating formative evaluations. Seminars or training on formative evaluations may assist with this.

Keywords: *Assessment, Formative, Formative Assessment, Teachers.*

I. INTRODUCTION

The goal of schools is to promote learning and teaching and ascertaining that this has taken place, often demands some assessment procedures by every teacher. Assessment is the term used to describe this method used for evaluating students (Matilda, & Helen, 2019). It is the procedure through which a teacher gathers information regarding the results of his or her instruction and utilizes the results for further development. It is a process that is often carried out by a teacher to determine whether pupils have learned the material that is required of them and the degree to which behavioral goals have been met. As a result, assessment has replaced other methods in schools for measuring students' learning progress (Ugodulunwa&Okolo, 2015).

Formative assessment or formative evaluation refers to a variety of formal and informal appraisal processes used by teachers or educators to adjust their teaching and learning strategies and improve student achievement (Young &Jackman, 2014). A formative assessment's objective is to track students' progress and give continual feedback that may help students recognize their strengths and shortcomings and focus on areas that need improvement (Matilda & Helen, 2019). Also, it enables teachers to see trouble areas and intervene right away. It often provides qualitative feedback (rather than grades) for the instructor and student that focus on the specifics of performance and subject. Summative assessment, which aims to track educational achievements, sometimes for reasons of external responsibility, is frequently contrasted with it (Figa, Tarekegne, &Kebede, 2020).

Formative evaluation requires ongoing checks and balances in the instructional and learning processes (Kennedy &Iyamu, 2021). The approach enables instructors to regularly review the development of their students and the efficacy of their own practice, enabling students to evaluate themselves. In order for teachers, students, or their peers to decide on the next steps in instruction that are likely to be better or more well-founded than the decisions they would have made without the evidence that was elicited, Ugodulunwa and Okolo (2015) noted that the practice in a classroom is formative.

In a word, formative assessments are examinations and quizzes that gauge how well a student understands a subject during the course of a course. Summative evaluations are examinations and quizzes that evaluate how much a student has learnt during the course (Figa, Tarekegne, & Kebede, 2020). In the classroom, this implies that summative exams are the final evaluations at the conclusion of a semester, whereas formative assessments are conducted during a term (Ugodulunwa & Okolo, 2015).

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Formative assessment provide real-time feedback on what students are learning or not learning so that instructional strategies, teaching resources, and academic assistance may be adjusted to meet the requirements of the students (De Lisle, 2015). They are not evaluated, may be casual, and can take many different shapes. Also, formative evaluations often have minimal stakes, which means they have little to no point worth (Figa, Tarekegne, & Kebede, 2020). As an example of a formative assessment, you may ask students to submit a research proposal for preliminary comments or to create a concept map in class to demonstrate their comprehension of a subject.

The Federal Republic of Nigeria (FRN, 2004) pointed that educational assessment and evaluation must be liberalized by being wholly or partially dependent on ongoing assessments of the student's development. When it stated succinctly that "the junior school certificate shall be based on assessment and examination conducted by state and federal examinations boards; while the senior school certificate shall be based on continuous assessment and a national examination," FRN (2004 revised 2013) further acknowledged the significance of assessment in the certification of junior and senior secondary school students. This is done to determine what a student has learned through cognitive, emotional, and psychomotor learning activities. As a result, formative assessment offers instructors and students feedback on student outcomes and behavioral changes, among other advantages.

Such feedback gives information that is utilized to alter the teaching materials, context, and procedures, as well as a range of other choices, in order to improve the student's performance (Kennedy &Iyamu, 2021). There must be a technique of insuring changes at each stage of the process that add up to the observable terminal desirable changes if a teacher is to guarantee desired changes in a student's behavior at the conclusion of a session. This is done to assess the observed progress—or lack thereof—of learners and choose the best course of action for promoting and maximizing learning. In this instance, learning or behavioral changes are cumulative, gradual, and ongoing. As a result, formative evaluation occurs during every class, not only at the conclusion of a term or year (if possible). Hence, formative assessment procedures cannot be compromised in order for the teaching-learning process to be successful (De Lisle, 2015).

While teachers often and enthusiastically use the conventional one-shot assessment, its execution has been a source of difficulty for both teachers and important school personnel. Observation has shown that teachers, who are responsible for carrying out the curriculum in the classroom, seem to know very little about what formative assessment involves. The systematic (periodic), progressive (complete), and guidance-oriented character of the practice is not well understood by many, and some qualified instructors have a tendency or attitude that is rather hostile to engaging in them.

In order to execute assessment in schools, it may be crucial to evaluate instructors' understanding of formative assessment (FA) procedures. This is so that they can effectively apply the curriculum in the classroom. However, according to Kennedy and Iyamu (2021), the majority of secondary school teachers in Edo State are reluctance to implement some assessment practices, such as asking and allowing students to ask all types of questions at period times before the end of a lesson; the type of test instrument to use; allowing them to solve lesson problems in pairs with class; and requiring students to compare their notes with their pairs, among others. Although many instructors are aware of the necessity for these activities, others see them as a tedious and boring duty. As a result, some of them are reluctant to engage in the numerous activities required. So, the issue of this research is to ascertain the level of comprehension of formative assessment procedures among instructors in public senior secondary schools in Nigeria's Edo Central Senatorial District.

➢ *Research Questions:*

The following research questions were raised to guide the study:

- What is theknowledge of formative assessment practices of teachers in public senior secondary schools in Edo Central Senatorial District, Nigeria?
- Is there any sex difference in the level of formative assessment practices of teachers in public senior secondary schools in Edo Central Senatorial District, Nigeria?

✓ *Hypothesis:*

The hypothesis formulated and tested in this study:

- There is no significant sex difference in the level offormative assessment practices of teachers in public senior secondary schools in Edo Central Senatorial District, Nigeria.

II. REVIEW

Several studies have focused on the formative assessment techniques used by instructors in classrooms. Using a quasi-experimental approach, Ugodulunwa and Okolo (2015) examined the impact of a formative assessment on mathematics test anxiety and performance of secondary school pupils in Jos, Nigeria. Among a total of 2,326 Senior Secondary Two (SS II) pupils, a straightforward random sample of 110 SS II students was chosen for the research. Data were gathered using two different types of mathematics achievement tests and a scale for measuring test anxiety in math. Descriptive and inferential statistical methods were used to examine the data. According to the research, many instructors are aware of formative assessment practices but do not use them as they should, which has an impact on students' test anxiety and performance in mathematics.

De Lisle (2015) investigated how teachers and stakeholders in Trinidad and Tobago's CA Programme (CAP) used formative assessment. The combined data imply that the intended goal of the program developers was often not met. Instead, educators often entered evaluation scores without referring to the information. There is evidence that instructors' educational views and practices did not align with their formative assessment procedures. While the design of CA schemes implies that formative and summative goals may work in harmony, in practice this ideal is seldom realized in these specific situations.

At Ethiopia's West Arsi zone secondary schools, formative assessment procedures were investigated by Figa, Tarekegne, and Kebede in 2020. The study method used was a descriptive cross-sectional survey design. Supervisors, administrators, instructors, and students from secondary schools participated in the research. Data was gathered via surveys, interviews, observations, and document analysis. The findings showed that secondary school instructors sometimes share learning goals with their pupils, occasionally include formative assessment techniques, and occasionally provide formative feedback, with a significant range in practices.

In Ghana's Cape Coast Metropolis, Asare (2020) looked at the perceptions of and practices around formative assessment among public basic school teachers. The research chose 300 instructors from the six (6) circuits in the Cape Coast Metropolis using a multistage selection process and a descriptive survey. Frequencies, percentages, means, standard deviations, and the Pearson product-moment correlation coefficient were used to analyze the data. The findings indicated that elementary school teachers see the value of formative assessment in the classroom favorably. It was also discovered that basic school teachers frequently used dominant practices like ensuring effective class participation, talking with students about feedback, using questions and answers during instruction, utilizing summative assessments formatively, assigning homework to students, and engaging them in role-playing exercises.

Young and Jackman (2014) investigated how often and how instructors in the Grenadian lower secondary school used formative assessment procedures (Forms 1, 2 and 3). 252 lower secondary school teachers participated in the quantitative investigation. Overall, the participants possessed knowledge, favorable attitudes, and judgments about formative evaluation. Almost half of the instructors said they encouraged pupils to write in journals instead of letting them contribute to the design of the exam.

The impact of formative classroom assessment on students' performance in junior secondary school Basic science in Edo State, Nigeria, was examined by Matilda and Helen (2019) in a pre-test, post-test experimental design research. All pupils at public Junior Secondary School 2 (JSS II) made up the study's population, and 80 of those individuals were purposefully selected and employed in the research. The results showed that formative classroom assessment affected the academic performance of the students in favor of the experimental group; it was also discovered to improve the academic performance of the students as seen in the difference between the pre-test and post-test in favor of the post-test; and no significant differences were discovered in the teachers' knowledge of formative classroom assessment. Kennedy and Iyamu (2021) looked at formative assessment knowledge and use in the context of teaching mathematics in public secondary schools in Benin Metropolis. The population of the study comprised of Mathematics instructors in the Benin Metropolis, and the sample size was 188. The study used a survey research methodology. Data gathering included the use of a standardized questionnaire. The results showed that while the mathematics instructors were skilled in the use of formative assessment, they did not consistently incorporate it into their lessons. Moreover, formative assessment knowledge and practice were solely impacted by years of experience.

III. METHODS

For this investigation, the descriptive research design was used. The population of the research consists of six hundred sixteen (616) secondary school teachers from all the public secondary schools in the Edo Central Senatorial District. 125 subject heads were randomly selected and acted as the representative sample in order to assess the teacher competence. These subject heads in educational institutions include language subject heads, science subject heads, and art subject heads. It was chosen to employ head teachers as proxy participants to assess their teachers' multiple-choice item design skills in order to remove biases and attitudes that may be associated with obtaining a self-report on instructors' proficiency.

An adapted questionnaire was used as the instrument for data collection. The instrument was adopted from the work of Ochour, Opoku-Afriyie, and Eshun (2022) who studied formative assessment practices of Social Studies teachers in Ghana using a 50-item survey questionnaire. The original instrument of Ochour, Opoku-Afriyie, and Eshun (2022) was separated into a number of dimensions, including barriers to practice, practice techniques, and real formative assessment procedures used by instructors. Only the 14 questions regarding formative assessment procedures were adapted in this investigation. Moreover, the original answer scale of never -1, sometimes -2, often -3, and always -4 was adjusted to represent the level of knowledge/awareness among instructors.

The instrument's face and content validity were assessed by two experts from the Department of Guidance and Counselling at Ambrose Alli University in Ekpoma. The test-retest reliability method was used to evaluate the instrument's dependability. 30 senior high school students from inside the study area and outside the research sample were given copies of the instrument to use in the technique. A few weeks later, the same respondents were given the same instrument once again. Their responses from the first and second tests were compared using the Pearson's Product

Moment Correlation technique. The instrument's reliability was shown by the coefficient's r-value of 0.78.

The copies of the questionnaire were disseminated prior to the research activity by getting in touch with the administrators of the selected schools and obtaining their permission. The mean (X) and standard deviation (SD) was utilized to examine research question 1. Teachers' knowledge was evaluated using a 2.50 criterion mean. So, a score of 2.50 or above indicates a good level of understanding of instructors' formative assessment strategies, but any score below 2.50 was interpreted differently. The hypothesis was examined using the t-test for two independent sample means. The hypothesis was examined at a significance level of 5%.

IV. RESULTS

➢ *The Result of the Analysis are Presented as Follows:*

- *Research Question 1:*

What is the knowledge of formative assessment practices of teachers in public senior secondary schools in Edo Central Senatorial District, Nigeria?

Table 1 Analysis of Multiple-Choice Construction Competence among Public Junior Secondary School Teachers in Edo Central Senatorial District, Nigeria

	Formative Assessment Practices	N = 125		
	As a teacher, how well do you know you should…	$\bar{X}$	S.D	Remark
1	Allow your students to ask any questions about the key ideas in a lesson.	2.68*	0.75	GK
2	Frame questions that will allow you to monitor students' progress.	2.62*	0.82	GK
3	Adjust instruction and assessment as needed to re-address the objectives more effectively.	2.35	0.91	PK
4	Move about the room and listen to what students are saying when they talk with partners.	2.56*	0.83	GK
5	Assess your students on concepts learnt to separate facts from opinions.	2.64*	0.79	GK
6	Collect and read their summaries.	2.12	1.24	PK
7	Provide feedback instantly.	2.35	0.67	PK
8	Allow your students to write the big idea for the lesson that has been covered.	2.47	0.94	PK
9	Follow the pair discussion by a whole class review to reach consensus on the concept under discussion.	2.78*	0.93	GK
10	Allow your students to write down any two questions based on the topic you have treated.	2.47	1.06	PK
11	Allow your students to solve problems during lessons in pairs.	2.32	0.85	PK
12	Allow your students to add any important notes that are missing from their partner's notes.	2.45	0.95	PK
13	Allow your students to enhance their partner's notes by underlining key terms or ideas.	2.31	0.74	PK
14	Allow your students to switch notes with their classmates in class	2.35	0.56	PK
	Overall mean = 2.46			

$* \bar{X}$ *is significant as it is greater than* 2.50

GK – Good knowledge PK – Poor Knowledge

The result in Table 1 shows that majority of the respondents had low response score mean on items 3, 6, 7, 8, 10, 11, 12, 13, and 14 at an overall mean score of 2.46 which is less than the criterion mean of 2.50 (i.e$\bar{X}$ = 2.46< 2.50). Hence, this implies that the teachers have poor knowledge of formative assessment practices in public senior secondary schools in Edo Central Senatorial District, Nigeria.

✓ *Hypothesis 1:*

There is no significant sex difference in the level of formative assessment practices of teachers in public senior secondary schools in Edo Central Senatorial District, Nigeria

Table 2 T-test Analysis on Sex difference Sex difference in the Level of Formative Assessment Practices of Teachers in Public Senior Secondary Schools in Edo Central Senatorial District, Nigeria

Variables	**Sex**	**(n=125)**	**$\bar{X}$**	**S.D**	**t-cal.**	**p-value**	**Remarks**
Knowledge of teachers' Formative assessment practice	Male	56	2.19	0.85	3.093	0.015	Reject null hypothesis
	Female	69	2.53	0.45			

The result in Table 2 shows that the mean score on teachers' formative assessment practice of 2.53 for female teachers was higher that than of their male counterpart at a mean score of 2.19. Hence, this answers the research question that sex difference exist in the level of formative assessment practices of teachers in public senior secondary schools in Edo Central Senatorial District, Nigeria. However, to determine whether the observed mean score difference is significant, the test result from the test of hypotheses shows that the calculated t-value of 3.093 is statistically significant ($p<0.05$). Therefore, the null hypothesis which states that there is no significant sex difference in the level of formative assessment practices of teachers in public senior secondary schools in Edo Central Senatorial District, Nigeria is rejected. This implies that sex difference exist in the level of formative assessment practices of teachers in public senior secondary schools in Edo Central Senatorial District, Nigeria.

V. DISCUSSION

The findings indicated that teachers in Nigeria's Edo Central Senatorial District senior secondary public schools have limited knowledge of formative assessment procedures. This research supports the findings of Figa, Tarekegne, and Kebede (2020), who discovered that secondary school teachers in Ethiopia's West Arsi zone secondary schools occasionally communicate learning objectives for students, occasionally integrate formative assessment strategies, and occasionally provide formative feedback. Findings, on the other hand, contradict the findings of Ugodulunwa and Okolo (2015), who discovered that many teachers in Jos, Nigeria, are aware of formative assessment practices but do not implement them as they should. As a result, students' test anxiety and performance in mathematics were negatively impacted. The results differ from those of De Lisle (2015), who discovered that at certain schools in Trinidad and Tobago, the formative goal of instructors was often not met since many teachers consistently recorded assessment marks without utilising the data. There is evidence that instructors' educational views and practices did not align with their formative assessment procedures. Despite the fact that De Lisle (2015) discovered that the design of formative assessment schemes implies the potential for synergy between formative and summative goals, he discovered that many instructors still lack the skills necessary to complete them successfully.

The results, however, contradict those of Young and Jackman (2014) who showed that participants had awareness of, and favorable impressions of, formative assessment since almost half of the instructors reported preventing student participation in test design and promoting journal writing instead. The results also diverge from those of Asare (2020), who discovered that teachers were aware of the prevalent assessment practices that basic school teachers typically engaged in, such as ensuring effective class participation, discussing feedback with students, using question-and-answer during instruction, making formative use of summative assessments, giving students home assignments, and engaging students in activities like role-playing in the Cape Coast Metropolis of Ghana. Also, it supports the results of Kennedy and Iyamu (2021), who found that while mathematics instructors in Benin Metropolis were skilled in the use of formative assessment, they did not consistently use it into their lessons.

The results show that there is a sex difference in favor of female instructors on the subject of formative assessment procedures in Nigeria's Edo Central Senatorial District's public senior secondary schools. This suggests that there are gender differences in teachers' use of formative assessment in public senior secondary schools in Nigeria's Edo Central Senatorial District. This research contradicts Matilda and Helen's results from 2019 that there was no discernible difference in teachers' expertise of formative classroom assessment in junior secondary school Basic science in the Egor Local Government Area of Edo State. On the contrary, it supports the findings of Kennedy and Iyamu (2021), who discovered that only years of experience had an impact on formative assessment knowledge and application.

VI. CONCLUSION

Conclusively, teachers in public senior secondary schools in Nigeria's Edo Central Senatorial District have insufficient awareness of formative assessment techniques and female teachers in the district's secondary schools had better levels of knowledge of these practices than male instructors.

RECOMMENDATIONS

The following recommendations are provided in light of findings:

- The government should concentrate more on exposing teachers to more practical ways of creating formative evaluations. Seminars or training on formative evaluations may assist with this.
- The principals and head teachers should assist in the development of a formative assessment policy for teachers in their school and then encourage teachers to abide by the policy by providing them with the necessary reinforcement.

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