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Teachers' Perception of the Impact of Assessment for Learning (AfL) on Students' Metacognition in Ibadan, Nigeria

Samuel O. Babalola [a]1, T. F. Ogooluwa [b]

[a,b] *University of Ibadan, Department of Arts and Social Sciences Education, Ibadan, Nigeria*

Abstract

The concept of metacognition refers to "thinking about thinking", a person's regulation of their cognitive processes. This study investigated secondary school teachers' perceptions of the impact of Assessment for Learning (AfL) on students' metacognition in Ibadan, Oyo State, Nigeria. It explored teachers' awareness of AfL, the frequency and effectiveness of its application in classrooms, and how it contributes to metacognitive growth in students. To achieve the objectives of the study, a descriptive survey design was employed, and a simple random sampling technique was employed to select two hundred (200) teachers from public secondary schools in Ibadan metropolis who participated in the study. The instrument used by the researchers in data collection was a self-designed questionnaire titled "Teachers' perception of the impact of assessment for learning on students' metacognition," after the validity and reliability had been determined by experts. Data were descriptively analyzed, and the criterion norm for decision making was placed at 2.5. Findings indicate that most teachers in Ibadan are familiar with AfL and acknowledge its value in fostering student engagement, self-reflection, critical thinking, and independent learning. Teachers also reported that AfL helps students become more aware of their learning strategies and improve their academic performance through continuous feedback. Due to a limited sample size, it might be inappropriate to generalize findings. Researchers are therefore encouraged to test this proposition further in order to validate its findings more comprehensively. This paper highlights the need for teachers to be trained and guided with effective assessment strategies and practical application in enhancing students' metacognition and improving learning outcomes.

Keywords: Assessment for learning, students' metacognition, teachers' perception, impact of assessment for learning

1. Introduction

The word "cognition" is from the Latin "cognoscere," which is to know or become aware. Cognition is the mental process involved in attaining knowledge and making decisions, including functions like memory, attention, perception,

[1] Corresponding author: Samuel O. Babalola. ORCID ID.: https://orcid.org/0000-0002-4423-3936
***E-mail address*: so.babalola@gmail.com**

language, and reasoning (Eysenck & Keane, 2020). It encompasses how individuals understand and interact with information. Distinct from cognition, metacognition involves thinking about one's own thinking. While cognition focuses on what an individual knows, metacognition is concerned with awareness and regulation of that knowledge.

John H. Flavell, a developmental psychologist, introduced the concept of metacognition in the 1970s. He defined it as "knowledge and cognition about cognitive phenomena" (Flavell, 1979). Though the term was new, the idea had long existed in educational thought. Metacognition broadly involves awareness and regulation of one's cognitive functions. Flavell (1976) clarified this as understanding one's cognitive processes and actively managing them through planning, monitoring, and evaluating, especially in learning and problem-solving contexts.

Flavell's model of metacognition is composed of two essential components: metacognitive knowledge and metacognitive experiences. Metacognitive knowledge refers to one's awareness of cognitive abilities, task understanding, and effective strategies (Flavell, 1979). This form of knowledge guides how individuals interact with and assess information. Metacognitive experiences, on the other hand, are conscious reflections occurring before, during, or after a cognitive task. These moments activate metacognitive knowledge, especially during high-stakes tasks like taking an examination, when individuals reflect on their understanding and adjust strategies accordingly. In such cases, students evaluate their understanding and confidence, and then adjust by refining, discarding, or reinforcing what they know.

Research indicates that individuals with well-developed metacognitive abilities actively regulate their learning through conscious monitoring and strategic thinking. In a rapidly evolving knowledge landscape, learners must be both socially and mentally engaged, which involves honing metacognitive skills. Students who are metacognitively aware tend to be more effective and strategic in their academic pursuits, as supported by studies like Dunlosky and Rawson (2020) and McCormick, Dimmitt, and Sullivan (2022).

Modern education demands more than content mastery; students must also know how to learn. Learning is now seen as an active process that entails reflecting on one's thinking. Metacognitive learners can assess what they know

and determine the steps needed to learn more (Griffith & Ruan, Azevedo, 2020). Classroom activities, especially assessments, play a key role in developing metacognitive skills. Assessment refers to collecting and analyzing information about student responses to tasks, and it shapes how students learn and approach their studies (Harlen et al., Santhosh, Montero, 2021; Brown, 2022; Karaman, 2021; Hanover Research, 2024).

Assessment involves various forms of data collection aimed at informing educational decisions related to curriculum, teaching, and student progress. It helps evaluate learning outcomes and guide instructional improvement (Brown, 2019; Hammerstein et al., 2021; Schildkamp, 2019). Rowntree (1987) highlighted its multiple purposes, such as diagnosing needs, providing feedback, and evaluating the effectiveness of education. Therefore, effective assessment should align with learning goals and employ diverse formats like examinations, assignments, quizzes, essays, presentations, reports, and problem-solving tasks. Assessment is of two types: summative assessment, which is also referred to as assessment of learning (AoL) and formative assessment which is also called assessment for learning (AfL). Assessment of learning is used to measure the achievement of learning outcomes, while AfL, or formative assessment, supports learning by informing instructional adjustments and encouraging student reflection (Ayuningtyas, 2018; Baars et al., 2020).

AfL focuses on assessing students' understanding during the classroom instruction process, rather than at the end. This allows teachers to identify students' prior knowledge, skills, and misunderstandings (Supovitz & Zhang et al., 2023). It promotes active learning through self-assessment, constructive feedback, and peer reviews (Hopfenbeck et al., 2023). These practices develop students' metacognitive thinking skills by helping them identify their strengths, reflect on weaknesses, and refine learning strategies (Monteiro et al., 2021). Methods like think-pair-share, group work, reflective questioning, self-assessment, and peer feedback foster deeper awareness of one's learning process. According to Williamson and Morgan (2020), routine classroom activities often serve as assessments, where teachers use tasks, questions, and student responses to gauge understanding and skills.

Integrating AfL into instruction encourages both teachers and students to monitor learning progress regularly using tools like self-and peer assessments

(Gulikers et al., 2021). These practices help students receive timely feedback and manage their study plans more effectively (Luo & Lim, 2024). AfL supports metacognitive growth by nurturing self-regulation through critical reflection. This aligns with AfL's learner-centered approach, where students take responsibility for using teachers' comment to improve their understanding (Allal, 2020; Brooks et al., 2021).

Despite its benefits, implementing AfL is often challenging. Teachers must not only define learning goals, gather, analyze and interpret assessment data but also involve learners as active participants in the process (Heitink et al., 2016; Kippers et al., 2018). These demands can make effective implementation of AfL complex and demanding, hindering its potential to support metacognitive development. Addressing this issue may require targeted professional development that equips teachers to implement AfL effectively across various classroom contexts.

AfL adds substantial value to contemporary education by shifting the role of assessment from grading to active learning. Through continuous feedback, self-assessment, and goal setting, students become more engaged and self-directed (Black & Wiliam, 2018). This enhances critical thinking, self-regulation, and a growth mindset, all of which contribute to improved academic outcomes (Stiggins; Hattie et al.; Andrade & Dylan, 2020). It supports personalized learning by addressing individual needs and empowering students to become autonomous learners equipped for the dynamic demands of the modern world (Brookhart, 2019, 2021; Earl & Teresa, 2022; Clarke & Sammons, 2022).

AfL promotes personalized instruction through targeted feedback that supports metacognitive growth (Hopfenbeck et al., 2023; Flórez & Sammons, 2022). It shifts the emphasis from traditional summative assessments such as standardized tests and end-of-term examinations to formative activities, thus strengthening their metacognitive capabilities (William; Popham, 2020; Andrade & Cizek, 2019) through personalized feedback. This personalized feedback builds students' resilience and encourages them to see challenges as learning opportunities, thereby deepening their love for learning and ongoing improvement (Bernacki et al., 2021; Zhang et al., 2023).

Although AfL and metacognitive strategies offer significant educational benefits, many Nigerian classrooms do not consistently apply them. While some educators may adopt elements of AfL that promote metacognitive development of learners, such practices among Nigerian teachers remain limited in scope and have not yet been reported with empirical data; thereby limiting what teachers generally agree as the impact of AfL on students' metacognitive development. As a result, this study investigates how well teachers in Nigeria comprehend and apply AfL, and the extent of their perception that AfL fosters learners' metacognitive growth. Therefore, the study examined teachers' awareness of AfL principles during classroom teaching, the extent of its integration in instructional delivery, and their perception of the importance of AfL in enhancing learners' metacognitive processes.

2. Literature Review

John Flavell's (1979) Metacognitive theory provides the theoretical framework for this study by highlighting self-awareness and self-regulation as key to effective learning. The theory outlines two critical components: metacognitive knowledge and regulation. Metacognitive knowledge refers to awareness of one's cognitive abilities, task demands, and strategies. On the other hand, metacognitive regulation involves planning, monitoring, and evaluating one's learning process. These skills help students make informed learning decisions, improve performance, and develop lifelong learning habits. Research confirms that metacognitive strategies like self-questioning and reflection boost academic outcomes, especially in critical thinking tasks. Teachers play a vital role by modeling and embedding these practices, helping students become independent and reflective learners. Through such support, learners become more autonomous, engaged, and effective in their academic pursuits.

Metacognition, meaning "beyond knowing," refers to the ability to reflect on and regulate one's cognitive processes such as memory, attention, and reasoning. Introduced by Flavell, it involves awareness of one's learning strategies, task demands, and personal strengths, enabling learners to plan, monitor, and evaluate their learning (Schraw & Moshman, 2020). Zohar and Barzilai (2019) view it as a higher-order skill essential for cognitive control. Studies show that students with strong metacognitive abilities perform better academically, as they effectively identify knowledge gaps and apply strategies efficiently (Abdelrahman, 2020). Training in metacognitive skills, even for a short time,

has proven particularly beneficial for struggling students. However, many learners require explicit instruction to develop these skills (Baars et al., 2020). Integrating metacognitive strategies in classrooms promotes independent, reflective learning.

A clear grasp of metacognition begins by differentiating it from cognition. Cognition entails mental functions like attention, memory, and problem-solving, while metacognition is the awareness and control of these processes. Cognition executes tasks; metacognition plans, monitors, and evaluates them, enabling reflective and self-regulated learning. For instance, summarizing content is cognitive, but planning study methods is metacognitive (Veenman et al., 2020; Schraw & Dennison, 2020).

Metacognitive skills allow learners to consciously plan, track, and assess their thinking during tasks, promoting goal setting, self-assessment, and academic improvement (Efklides, 2020). These skills, when practiced through strategies such as self-questioning, summarization, and note-taking, help students manage their learning more effectively (Azevedo, 2020; Tang et al., 2024). Their development correlates with academic success and should be embedded in teaching practice.

Assessment for Learning (AfL) enhances learning by providing ongoing feedback that identifies current understanding, clarifies goals, and informs the next steps (Foster & Piacentini, 2023). Unlike summative assessments, AfL integrates assessment into the learning process, using formative tools to guide teaching and promote student engagement (Brown, 2022). Core principles include clear objectives, student involvement, and responsive instruction (Black & Wiliam, 1998; Carless, 2015).

AfL is increasingly valued for improving teaching and student outcomes. Research shows it fosters motivation, self-awareness, and academic gains (DeLuca et al., 2019). It supports lifelong learning and helps teachers address diverse student needs (OECD, 2023). Students, in turn, benefit from goal-oriented learning and self-assessment opportunities. However, its impact hinges on the quality of feedback.

Effective feedback must be clear, timely, and actionable. It should guide improvement without doing the work for students, addressing both cognitive and emotional dimensions (Lipnevich & Panadero, 2021; Lui & Andrade, 2022). Feedback should focus on specific areas, support learning goals, and encourage independent problem-solving (Zhang et al., 2023; Li et al., 2020). Self-assessment further nurtures autonomy and critical thinking (Aldosari & Alsager, 2023).

Questioning is another vital AfL technique. Teachers commonly use questions to gauge understanding, but strategic questioning improves learning outcomes (Black & Wiliam, 2018). Closed questions assess recall, while open ones promote deeper thinking and discussion (Brookhart, 2019). Effective questioning reveals students' thought processes and enhances classroom interaction. It builds student confidence, supports self-esteem, and creates a positive learning environment (Walsh & Sattes, 2015).

Teachers' perceptions of AfL shape its classroom implementation. AfL transforms assessment into a learning tool, encouraging student engagement, goal setting, and collaboration (Black & Wiliam, 2018; Carless, 2025). Yet, many teachers struggle with its consistent use due to limited training or institutional support (Heritage, 2016). Professional development is key, as teachers with AfL training show greater confidence and competence (Bennett, 2011).

Metacognitive learners perform better academically and manage anxiety effectively (Koltovskaia et al., 2024). However, resistance to AfL persists due to inadequate teacher preparation. Nigerian teacher education still emphasizes traditional models, limiting readiness for AfL (Obioma & Adeniran, 2020). This gap hinders students' independence and critical thinking, resulting in overreliance on teachers and ineffective learning strategies (Karatas & Arpaci, 2021; Zuhana et al., 2023). Enhancing teacher understanding of AfL can promote more effective instruction, foster metacognitive growth, and support lifelong learning.

Despite the well-established benefits of Assessment for Learning (AfL) and metacognitive strategies in improving student learning outcomes, these practices remain underutilized in Nigerian schools. Many educators lack sufficient awareness or understanding of AfL, hindering its application and the

enhancement of students' metacognitive competence. The Nigerian educational system predominantly relies on traditional summative assessments that focus on measuring academic achievement, rather than fostering continuous learning and self-regulation. This approach is problematic, especially considering the diverse needs of students, with some being self-directed and proactive, while others struggle with self-regulation or lack insight into their learning processes. Current assessment practices fail to fully engage students, missing crucial opportunities to shift their attitudes toward learning and increased motivation. Furthermore, many teachers, particularly in public schools, are primarily trained to administer summative assessments rather than integrate assessment into daily teaching. This study aims to explore teachers' perceptions of the impact of AfL on students' metacognitive development, identify the barriers to its effective implementation, and propose strategies to encourage its adoption in Nigerian schools, with the goal of enhancing both students' metacognitive skills and academic performance.

The study aims to examine teachers' perception of the impact of Assessment for Learning on students' metacognition in Ibadan, Oyo State, Nigeria, and assess the extent to which teachers' effectively implement Assessment for Learning to aid students' metacognition in Ibadan, Oyo State, Nigeria. As a result the research questions are formulated as in the following:

1. How do teachers perceive the role of assessment for learning in enhancing students' metacognition in Ibadan, Oyo State?

2. To what extent do teachers engage in the implementation of assessment for learning in aiding students' metacognition in Ibadan, Oyo State?

3. Method

3.1. Research Design

To achieve the objectives of the study, a descriptive survey design was employed. This was considered appropriate because the study did not introduce any intervention but sought teachers' responses through questionnaires on the impact of AfL on learners' metacognition.

3.2. Participants and sampling

The study population consists of all teachers in public secondary schools in the Ibadan metropolis of Oyo State, Nigeria. This means that all teachers in the public secondary schools had an equal chance to participate in the study. A simple random sampling technique was then employed to select two hundred (200) teachers from public secondary schools in Ibadan metropolis who participated in the study.

3.3. Instrument

The instrument used by the researchers in data collection was a self-designed questionnaire titled "Teachers' perception of the impact of assessment for learning on students' metacognition." The questionnaire had three (3) sections. The first section, Section A, which collected demographic data of participants, has four (4) items. These were age, gender, teaching experience, and qualifications. Section B, which has ten (10) items focused on teachers' opinions regarding the role of AfL in improving students' metacognition, a four-point Likert scale of "Strongly Agree", "Agree", "Disagree", and "Strongly Disagree" was used to rate the items. Lastly, Section C, with ten (10) items, explored how teachers implemented AfL to improve students' metacognition during instructional delivery in their classrooms. Similarly, a four-point Likert scale of "Strongly Agree", "Agree", "Disagree", and "Strongly Disagree" was used to rate the items. Validity and reliability of the instrument.

To determine validity, experts from the Faculty of Education of the University of Ibadan were engaged to look critically at the instrument for content and face validity. Furthermore, to ascertain the reliability of the instrument, the researchers administered the instrument to a small sample who were not involved in the main data collection. The Cronbach analysis was used to analyze the data obtained from the pilot data collection, and it yielded the reliability coefficient of .92.

3.4. Data collection

To ensure effective participation and teacher response, the researchers personally administered the questionnaire to the respondents, provided

explanations to teachers to avoid misconceptions about the purpose of the study, and assured that the data would be strictly for research. This process helped the researchers to achieve a 100 percent retrieval rate for the 200 questionnaires that were distributed. The administration process lasted for 6 weeks.

3.5. Ethical adherence/approval

Ethical approval was obtained from the Faculty of Education Research Ethics Committee, and participants' consent was sought before they took part in the study, having assured them that the results would be used only for research purposes. The principles of anonymity and confidentiality were maintained. Only teachers who showed willingness were allowed to participate in the study.

3.6. Data Analysis

Descriptive statistics of frequency and percentages were used in analyzing the data. Also, descriptive tables, mean, and standard deviation were used. The criterion norm for decision making was placed at 2.5.

4. Results

Research Question 1: How do teachers perceive the role of Assessment for Learning in enhancing students' metacognition in Ibadan, Oyo State?

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Table 1: The Perception of Teachers of the impact of AfL on students' metacognition

S/N	ITEMS	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Standard Deviation
1.	Assessment for learning is crucial in helping students understand their own learning processes.	147.0 (73.5%)	53.0 (26.5%)	0 (0%)	0 (0%)	3.74	.442
2.	Assessment for learning helps students to recognize their strengths and areas of challenge.	122.0 (61.0%)	78.0 (39.0%)	0 (0%)	0 (0%)	3.61	.489
3.	Assessment for learning is an effective way to improve learners' critical thinking and problem-solving abilities.	122.0 (61.0%)	75.0 (37.5%)	3.0 (1.5%)	0 (0%)	3.60	.522
4.	Assessment for learning encourages students to plan, monitor, and evaluate their learning.	83.0 (41.5%)	117.0 (58.5%)	0 (0%)	0 (0%)	3.42	.494
5.	I believe that assessment for learning enables students to take responsibility for their learning.	105.0 (52.5%)	85.0 (42.5%)	10.0 (5.0%)	0 (0%)	3.48	.593
6.	Assessment for learning helps students understand how their thinking influences their learning.	95.0 (47.5%)	101.0 (50.5%)	4.0 (2.0%)	0 (0%)	3.46	.538
7.	Is timely feedback in assessment for learning helpful in guiding students' study decisions?	114.0 (57.0%)	83.0 (41.5%)	2.0 (1.0%)	1.0 (0.5%)	3.55	.547
8.	Would assessment for learning assist students in setting goals and tracking their progress?	93.0 (46.5%)	104.0 (52.0%)	3.0 (1.5%)	0 (0%)	3.45	.528
9.	Assessments for learning encourage students to think about how they think and adjust their learning strategies.	97.0 (48.5%)	99.0 (49.5%)	4.0 (2.0%)	0 (0%)	3.47	.539
10.	Can assessment for learning help students develop awareness and control over their own learning strategies?	89.0 (44.5%)	100.0 (50.0%)	11.0 (5.5%)	0 (0%)	3.39	.591
	Weighted Average = 3.51						

Table 1 presents that the weighted average of 3.51 which is greater than the standard mean of 2.50; strongly agree that the majority of teachers perceive Assessment for Learning (AfL) as crucial in enhancing student metacognition.

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Research Question 2: To what extent do teachers engage in the implementation of Assessment for Learning in supporting students' metacognition in Ibadan, Oyo State?

Table 2: Teachers' engagement in the implementation of Assessment for Learning for student's metacognition

S/N	ITEMS	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean	Standard Deviation
1.	I regularly use questioning techniques to help students reflect on their learning.	85.0 (42.5%)	111.0 (55.5%)	3.0 (1.5%)	1.0 (0.5%)	3.40	.549
2.	I encourage students to set learning targets and monitor it.	67.0 (33.5%)	127.0 (63.5%)	5.0 (2.5%)	1.0 (0.5%)	3.30	.540
3.	My feedback helps students to improve how they approach and manage their learning.	80.0 (40.0%)	117.0 (58.5%)	3.0 (1.5%)	0 (0%)	3.39	.518
4.	I plan activities that help students reflect on their learning progress.	78.0 (39.0%)	92.0 (46.0%)	20.0 (10.0%)	10.0 (5.0%)	3.19	.811
5.	Assessment for learning is a regular and essential part of my teaching methods.	75.0 (37.5%)	99.0 (49.5%)	15.0 (7.5%)	11.0 (5.5%)	3.19	.798
6.	I provide learners with the chance to assess their learning and reflect on what they need to improve on.	71.0 (35.5%)	90.0 (45.0%)	31.0 (15.5%)	8.0 (4.0%)	3.12	.812
7.	The use of formative assessments helps to monitor students' thinking and adjust my teaching strategies accordingly.	90.0 (45.0%)	93.0 (46.5%)	15.0 (7.5%)	2.0 (1.0%)	3.36	.664
8.	As a teacher, I help students utilize feedback from assessments to create personalized improvement strategies.	78.0 (39.0%)	105.0 (52.5%)	12.0 (6.0%)	5.0 (2.5%)	3.28	.688
9.	I incorporate both self-assessment and peer assessment to foster metacognitive skills in students.	76.0 (38.0%)	102.0 (51.0%)	20.0 (10.0%)	2.0 (1.0%)	3.26	.674
10.	I actively involve students in discussions about their learning progress and the strategies they apply to succeed.	90.0 (45.0%)	95.0 (47.5%)	10.0 (5.0%)	5.0 (2.5%)	3.35	.693
Weighted Average = 3.28							

Table 2 shows that the weighted average of 3.28 which is greater than the standard mean of 2.50, support that the extent to which teachers engage in effective implementation of Assessment for Learning in aiding students' metacognition is high.

5. Discussion

5.1. Teachers' perception of the impact of Assessment for Learning in enhancing students' metacognition

The study reveals that Assessment for Learning (AfL) holds significant value for educational practice. There is a strong consensus among teachers that AfL effectively supports student achievement and caters to diverse learning needs. Their perception aligns with existing literature, as they believe that effective implementation of AfL substantially enhances students' metacognitive development. Teachers emphasize that AfL shifts the focus from merely measuring outcomes to actively engaging students in their learning through ongoing feedback, self-assessment, and goal-setting. This approach not only promotes critical thinking and self-regulation but also improves academic performance and fosters a growth mindset.

Similarly, evidence suggests that teachers acknowledge AfL's role in boosting student engagement and motivation by redefining the purpose of assessment. While traditional assessments such as standardized examinations and final tests primarily serve summative purposes, AfL introduces formative tools including in-class tasks, homework, and low-stakes quizzes. These instruments frame learning as a continuous process, prompting students to prioritize progress over grades (Black & Wiliam, 2018; Carless, 2025). This paradigm encourages a more proactive learning attitude and cultivates a genuine desire for feedback. In turn, students engage in deeper self-reflection, which helps them recognize their strengths, target areas for improvement, and develop a clearer understanding of subject matter. These habits strengthen their metacognitive abilities, empowering them to regulate learning strategies, set academic goals, and adapt to new challenges (Brown, 2022; Levy-Feldman, 2025). Research by Oyinloye and Sitwala (2019) further indicates that learners in AfL-oriented environments consistently outperform those in traditional settings.

Additionally, AfL promotes a collaborative learning atmosphere where both students and teachers actively pursue academic goals. Teachers' feedback fosters students' confidence, while students take increasing responsibility for their progress. This partnership not only improves academic results but also equips learners with skills essential for lifelong learning (Foster & Piacentini, 2023). Consequently, Bennett (2011) reports that teachers who underwent targeted training in formative assessment demonstrated greater confidence in using AfL techniques such as peer assessment, self-evaluation, and feedback-based instruction. Thus, the study reinforces that AfL is not only well-supported

in the educational context of Ibadan, Oyo State, but it is also widely viewed as an indispensable tool for deepening learning, nurturing student skills, and cultivating long-term academic success by the teachers.

5.2. The extent to which teachers engage in the implementation of Assessment for Learning in supporting students' metacognition

The findings of the study contradict the assertions of several scholars who have reported that teachers in Nigeria rarely engage in the implementation of AfL. This reported teachers' non-implementation of AfL has been attributed to various challenges, such as a lack of professional training in AfL, as noted by Okonkwo (2021), and large class sizes, as pointed out by Adesina (2022). Ibrahim (2023) highlighted inadequate infrastructure and limited access to teaching resources as key impediments. Similarly, Adebayo (2021) and Ezeugwu (2020) identified the dominance of an examination-focused culture and the pressure of high-stakes testing, including WAEC, NECO, and UTME, as significant barriers. Swaffield (2011) further noted that insufficient time allocation in the school timetable has hindered the effective use of AfL in Nigerian classrooms. Additionally, Stiggins (2022) and Mertler and Campbell (2020) argued that the poor or complete lack of integration of AfL into school policies negatively affects its implementation.

Nonetheless, several studies have emphasized that Assessment for Learning is a critical strategy for improving student outcomes by providing continuous feedback that identifies learning gaps and supports timely interventions (Yan et al., 2023). Unlike summative assessments, AfL motivates students and promotes reflective learning (Cauley & McMillan, 2020; Gilboy et al., 2019). It positively influences students' learning approaches, self-perception, and motivation, ultimately enhancing academic success (Harlen & Crick, 2018; Brookhart, 2019). For AfL to yield its full benefits, teachers must apply it competently by offering clear, actionable feedback that guides student progress (Hattie & Timperley, 2007; Black & Wiliam, 2018). When teachers provide such feedback effectively, they foster students' metacognitive development. Moreover, when teachers deliberately incorporate metacognitive practices such as think-pair-share, think-aloud, strategic questioning, goal-setting activities, and error analysis, students' learning outcomes are significantly enhanced. Equally, involving learners in self-assessment and reflective activities contributes to the development of their metacognitive skills, thereby supporting long-term academic growth (Lee, 2020; Oyinloye, 2021).

Notably, a distinguishing factor in this research is the geographical context in which it was conducted, the 'central urban Ibadan'. In this location, a significant number of teachers hold academic postgraduate qualifications such as master's degrees or doctorates. Many of them have also benefited from exposure to various professional development activities, including seminars, workshops, conferences, symposia, in-service training, and capacity-building programs. Such experiences may have significantly contributed to their heightened awareness and effective application of AfL strategies, thereby distinguishing the findings of this study from previous ones. Consequently, the study underscores the need for continued professional development across all regions to ensure uniformity in AfL implementation, ultimately promoting deeper learning and improved student outcomes nationwide."

6. Conclusions

This study explored secondary school teachers' perceptions of the impact AfL on students' metacognition. The findings suggest that successfully implementing AfL in Ibadan, Oyo State, Nigeria, could significantly improve learning outcomes by enhancing student active classroom engagement, problem-solving, and critical thinking skills. While some schools have effectively adopted AfL strategies, the broader integration of formative assessment is hindered by systemic challenges, including inadequate teacher training, a focus on exams, and insufficient emphasis on creating supportive classroom environments. To address these challenges, policymakers must prioritize professional development, enhance AfL integration into teacher education, promote classroom environments that support continuous formative assessment, and implement policies that promote AfL as a core educational practice.

7. Recommendations

As a result of the findings, the following recommendations can be made to enhance the implementation and effectiveness of Assessment for Learning (AfL) in Nigerian classrooms, particularly in Ibadan, Oyo State:

1. Teachers should embed metacognitive strategies such as self-questioning, planning, and reflection into daily instruction to help students develop awareness and control over their learning processes.

2. AfL practices, including timely feedback, peer review, and self-assessment, should be consistently applied to support metacognitive development and self-regulated learning

3. Ongoing professional development should equip teachers with the practical skills needed to implement AfL and metacognitive strategies effectively in Nigerian classrooms, addressing gaps in awareness and confidence.

4. Feedback should be clear, specific, timely, and actionable, encouraging students to reflect and take ownership of their learning while supporting both cognitive and emotional needs.

5. Nigerian education systems should reduce overreliance on summative assessments and prioritize formative tools that guide instruction, support learning, and foster critical thinking.

6. Classrooms should incorporate structured opportunities for students to engage in reflective practices and collaborative problem-solving, enhancing their metacognitive skills and academic engagement.

7. Teacher training institutions in Nigeria must revise their curricula to include modules on AfL and metacognitive instruction, preparing pre-service teachers for learner-centered and reflective pedagogy.

8. Students should be encouraged to set personal learning goals, monitor their progress, and evaluate outcomes, cultivating independence and intrinsic motivation.

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