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EDITORIAL

Dear Readers,

We are excited to announce the launch of International Journal of Contemporary Issues in Integrated Science Education (IJCIISE). This Association Integrated Science Educators' Association of Nigeria (ISEAN) play a vital role in promoting scientific advancement, supporting science education, informing science policy, recognizing science excellence and fostering community engagement. The desire to float this journal was borne out of the passion to organize a yearly conference of Integrated Science by the Integrated Science Educators' Association of Nigeria, of which selected scholarly articles will be published after a thorough review. The journal dedicated to advancing knowledge and fostering dialogue within. Our mission is to publish high-quality research, innovative ideas, and critical analyses that contribute to the understanding and development of Integrated Science. At IJCIISE, we believe in the power of interdisciplinary collaboration and inclusivity. We welcome contributions from scholars, practitioners, and thought leaders worldwide, providing a space for diverse perspectives and groundbreaking work. As we embark on this journey, we invite you to submit your research, engage with our content, and join us in creating a vibrant academic community. Together, we can push the boundaries of knowledge and inspire future generations. Thank you for your support as we launch this exciting new endeavour.

This edition moves around issues that border on "**Enhancing Quality Assurance in Integrated Science in Nigeria.**" It is believed that diverse contributions from scholars and researchers expressed in this edition will provoke the understanding of issues that could foster education for societal transformations on a global scale
We look forward to your contributions!

For further information on future conference activities, visit <http://ijciise.org/index.php/ijciise>

Warm regards,
Professor O. S. Agboola
President, Integrated Science Educators' Association of Nigeria (ISEAN)

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**TEACHERS' CLASSROOM PRACTICES AND UPPER PRIMARY
SCHOOL PUPILS' LEARNING OUTCOMES IN BASIC SCIENCE AND
TECHNOLOGY, OGUN STATE.**

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Abstract

Pupils' learning outcomes is the product of all learning processes. The study is on enhancing pupils' learning outcomes through teachers' classroom practices in Basic Science in upper primary schools in Ogun State. Descriptive research designed was adopted for the study, 150 pupils were randomly selected from five schools. A self-structured achievement test was used as instrument for the study to assess the effect of teachers' classroom practices in basic science. Collected data were analyzed using frequency counts and mean difference. The result of the findings established positive impact of the teachers' classroom practices on pupils' academic performance. Before the adherence to quality and the implementation of teachers' classroom practices (active learning, differentiated instruction, formative assessment, and collaborative learning, pupil learning outcome was moderate and varied), has a mean score of 12.5. However, after the adherence to teachers' classroom practices was applied, there was an improved outcome, with respondents scoring above average and achieving a higher mean score of 16.5. The findings

established that student-centered, interactive learning and feedback-oriented instructional methods ensured by healthy teachers' classroom practices enhances pupil engagement, address diverse learning needs, and leads to better academic outcomes. The study recommended among others that teacher' classroom practices is key to an improved learning outcome, so in-service training should be organized for teachers.

Keywords: Teachers' Classroom Practices, Students Learning Outcome, Upper Primary Schools, Learning Processes,

Introduction

Teachers' classroom practices have been extensively studied by some Nigerian scholars and researchers, who have provided comprehensive definitions and analyses of these practices within the educational context. These practices are recognized as the methods, strategies, and behaviours that teachers employ within the classroom to facilitate learning, manage student behaviour, and create an environment conducive to academic success.

Ogunyemi (2016) defines teachers' classroom practices as the deliberate actions and decisions made by teachers to deliver instructional content and manage classroom activities effectively. These practices include lesson planning, the use of instructional materials, the adoption of specific teaching methods, and the implementation of classroom management strategies. He emphasizes that these practices are shaped by the teachers' understanding of the curriculum, their pedagogical knowledge, and the socio-cultural context of the classroom. The effectiveness of these practices is judged by their ability to meet educational objectives and improve student learning outcomes. In a similar vein, Ojo & Olaniyan (2018) describe teachers' classroom practices as the dynamic interaction between the teacher, the students and the content being taught. They argue that these practices are not static but evolve based on the classroom environment, the pupils' needs, and the resources available. Effective classroom practices involve the use of diverse teaching methods that cater to different learning styles and the application of continuous assessment techniques. They stress that teachers' classroom practices are crucial for fostering a positive learning environment and promoting student engagement.

Adegoke and Owolabi (2020) focus on the impact of teachers' classroom practices on student performance. They define these practices as the specific actions taken by teachers to deliver content, assess student understanding, and provide feedback. They argue that effective classroom practices are those that are aligned with the curriculum, use a variety of teaching aids, and encourage active student participation. Oluwaseun and Adebayo (2023) offer a comprehensive definition that includes both instructional and non-instructional practices. They describe teachers' classroom practices as the sum of all actions taken by teachers to facilitate learning, including instructional delivery, classroom management, student assessment, and the establishment of classroom norms and routines.

Statement of the Problem

In spite of numerous educational reforms and initiatives aimed at improving pupils' learning outcomes in Basic Science, a very good number of pupils continue to exhibit poor learning outcomes in this subject. These outcomes, reflected in low test scores, lack of interest in basic science, and inadequate mastery of scientific concepts, are the concern of science educators given the critical role of Basic Science plays in the foundation of science education and the development of scientific literacy. This persistent issue raises questions about the effectiveness of current teaching practices in fostering meaningful learning experiences and achieving desired learning outcomes.

Given the critical importance of basic science as a foundation for future scientific and technological pursuits, it is therefore, imperative to address how teachers' classroom practices can be enhanced to improve pupils' learning outcomes in this subject. This study seeks to investigate how teachers' classroom practices can improve pupils' learning outcomes in basic science.

Objectives of the Study

The main objective of this study is to find out best teachers' classroom practices that can enhance pupils' learning outcomes in basic science. Specifically, this study seeks to:

- i. determine the relationship between teachers' classroom practices and pupils' interest in Basic Science in Ogun State.
- ii. assess the relationship between teachers' classroom practices and pupils' academic performance in basic science in Ogun State.

Research Questions

- i. Do teachers' classroom practices affect pupils' interest in basic science?
- ii. To what extent do teachers' classroom practices improve pupils' academic performance in basic science?

Literature Review

Theoretical Framework

Activity Theory

Darling-Hammond (2006) notes: "One of the perennial dilemmas of teacher education is how to integrate theoretically based knowledge that has traditionally been taught in university classrooms with the experience-based knowledge that has traditionally been located in the practice of teachers and the realities of classrooms education programmes can be improved only if the teacher educators help student teachers to identify the gap between teaching and theory and continually facilitate them in connecting their learnt theory and practice.

Activity theory (AT) which originated from the classical German philosophy of Kant and Hegel is a framework for studying various forms of human practice as developmental processes, interlinking individual and social levels (Jonassen and

Rohrer-Murphy, 1999). It postulates that learning and activity are interrelated conscious learning emerges from activity, rather than preceding it. In its most general sense, human knowledge and capabilities revolve around interacting with the world and other people, that is, physical and social situations, in useful ways. The three prime components of this theory are the subject, the object of the activity, and the community in which they act. The subject is the individual(s) engaged in the activity, and the object is that which results or is sought, i.e., the motivating intention of the activity. In instructional design, a curriculum design may be considered as the object. In every purposeful activity, subjects use tools in order to achieve the object, thereby turning the object into an outcome. The tools refer to both physical and psychological. AT is a socio-cultural, socio-historical lens through which designers can analyze human activity systems. It provides a different lens for analyzing learning processes and outcomes for the purpose of designing instruction.

Jonassen (2000) summarizes the rationale for applying activity theory to learning environments: Activity theory provides a different lens for analyzing learning processes and outcomes for the purpose of designing instruction. Rather than focusing on knowledge states, it focuses on the activities in which people are engaged, the nature of the tools they use in those activities, the social and contextual relationships amongst the collaborators in those activities, the goals and intentions for those activities, and the objects or outcomes of those activities. The implication for designing instruction is that the context of learning and performance is vital, since activity cannot be understood outside its context. Relevant aspects are: the kind of activity, the student (or subject), tools and learning environment (or online tools), its rules and norms, the divisions of labour between community members, and the conventions (rules or protocols) regarding actions. AT can inform the key aspects of learning design: the learning outcomes, the teaching and learning activities, and the assessments. Given below are AT's implications to learning and instruction:

- Learning in authentic context: There is need to situate learners in an authentic context—the contexts of their activity, and the activity itself.
- Providing scaffolding: Learning environments must be capable of providing learning experiences that challenge students to work within, and push beyond current levels of performance and develop new abilities. Thus, provide external support from the instructor, peers, experts, artefacts or tools as the learners construct knowledge. However, it has to be noted that activity theory focuses on practice; it is primarily a descriptive tool rather than a prescriptive theory.

Concept of Basic Science and Teachers' Classroom Practices

Basic Science, as a foundational discipline in the Nigerian education system, is designed to introduce students to fundamental scientific concepts and methodologies that prepare them for advanced study in specific branches of science such as biology, chemistry, physics, and environmental science. Adebayo (2020), in

his research on science education in Nigeria, defines Basic Science as "a multidisciplinary approach to teaching core scientific principles that foster an understanding of natural phenomena and encourage inquiry-based learning." Basic science is a subject that cut across all level of education.

Teachers' classroom practices refer to the strategies, techniques, and methods employed by teachers to facilitate student learning and classroom management. These practices include instructional methods, assessment techniques, student engagement strategies, and the creation of conducive learning environments. Scholars and researchers, both within and outside Nigeria, have examined teachers' classroom practices extensively, focusing on their impact on student achievement, teaching effectiveness, and overall learning experiences. Adegoke (2021), in his study on teaching practices in Nigerian secondary schools, defines classroom practices as "the range of teaching and assessment techniques used by educators to deliver content, manage the classroom, and assess student learning."

Daramola (2023) focusing on classroom practices in rural Nigerian schools, notes that teachers face additional challenges, such as inadequate infrastructure and resources, which limit their ability to implement effective practices. Daramola defines teachers' classroom practices as "the actions and strategies employed by teachers to manage classroom dynamics, deliver content, and assess student progress within the constraints of their environment." He advocates for more government support in rural areas to improve the conditions under which teachers work, enabling them to adopt more varied and effective classroom practices.

Darling-Hammond (2010) views classroom practices as integral to creating equitable and effective learning environments. She defines teachers' classroom practices as "the deliberate instructional choices made by educators to ensure all students, regardless of background, can access and engage with the curriculum." Darling-Hammond stresses the importance of culturally responsive teaching and differentiated instruction, which are key to addressing diverse learners' needs. Her research highlights how effective classroom practices can bridge gaps in student achievement, especially for disadvantaged or marginalized groups.

Teachers' Classroom Practices

Teachers' classroom practices encompass the diverse strategies and techniques they employ to enhance student learning and foster a productive classroom environment. These practices influence pupils' academic performance, motivation, and overall engagement in the learning process. Recent research and scholarly perspectives provide valuable insights into effective classroom practices.

a. Lesson Planning and Organization

Lesson planning is a cornerstone of effective teaching. Properly organized lessons allow teachers to structure their classes effectively and ensure alignment with learning goals. Ali et al. (2023) argue that "meticulous lesson planning enhances instructional clarity, allowing teachers to address pupils' needs systematically."

Teachers who clearly define their objectives and prepare relevant materials can create a focused and coherent learning experience, ultimately improving student comprehension and performance.

b. Active Learning Techniques

Active learning is increasingly recognized as a critical component of effective teaching. It involves engaging students in tasks that require critical thinking and collaboration. Recent studies highlight its benefits, with Chen and Hou (2022) noting that “active learning strategies significantly improve student retention and deepen their understanding of complex concepts.” Techniques such as group discussions, debates, and project-based learning promote critical thinking and help students take ownership of their learning process.

c. Differentiated Instruction

The diversity of learners in classrooms demands teaching approaches that cater to varied needs. Differentiated instruction, which involves tailoring teaching methods to pupils' individual learning styles, is a proven strategy. According to Tomlinson et al. (2022), “differentiation not only meets the diverse needs of learners but also fosters equity in the classroom, ensuring that every student has access to meaningful learning experiences.” Strategies such as flexible grouping, varied instructional materials, and adaptive assessments empower all students to achieve their potential.

d. Use of Formative Assessment

Formative assessment is a dynamic process that enables teachers to gauge pupils' understanding and adjust their teaching accordingly. Almazan and De Leon (2021) emphasize that “ongoing feedback through formative assessments helps identify learning gaps and facilitates timely interventions.” Techniques such as quizzes, exit tickets, and reflective journaling not only provide insights into pupils' progress but also encourage active participation and self-reflection.

e. Classroom Management and Reinforcement

Effective classroom management lays the foundation for a conducive learning environment. Teachers must establish clear rules and expectations to minimize disruptions and maximize instructional time. A study by Johnson and Gray (2023) concludes that “structured classroom management strategies reduce behavioural issues and create a supportive space for learning.” Positive reinforcement, consistent routines, and respectful communication are essential components of successful classroom management.

f. Technology Integration in Teaching

The integration of technology in teaching has transformed traditional classrooms into interactive and engaging learning spaces. With the rise of digital tools, teachers can deliver lessons more innovatively. Ahmed et al. (2022) highlight that

“technology-enriched teaching approaches enhance learner engagement and facilitate personalized learning experiences.” For instance, interactive whiteboards, online quizzes, and educational apps cater to various learning styles and make abstract concepts tangible.

g. Culturally Responsive Teaching

Culturally responsive teaching ensures that pupils' cultural identities are valued and reflected in the curriculum. In multicultural classrooms, this approach helps bridge cultural gaps. Lopez and Rodriguez (2022) assert that “embedding cultural relevance in teaching practices fosters a sense of belonging and increases pupils' academic performance.” Including diverse perspectives and materials in lessons not only enriches learning but also promotes inclusivity.

h. Collaborative Learning

Collaborative learning emphasizes teamwork and shared responsibilities among students. This method is particularly effective in building communication skills and fostering a deeper understanding of the material. Smith and Chen (2023) observe that “students involved in cooperative learning settings demonstrate improved problem-solving skills and a greater sense of community.” Activities like group projects and peer tutoring cultivate both social and cognitive competencies.

i. Inquiry-Based Learning

Inquiry-based learning encourages students to ask questions and explore solutions, promoting critical thinking and independence. Recent research by Patel and Kumar (2022) finds that “inquiry-based methods significantly enhance pupils' analytical skills and engagement by connecting learning to real-world problems.” This approach, often used in STEM education, stimulates curiosity and nurtures lifelong learning habits.

j. Constructive Feedback and Motivation

Providing constructive feedback is crucial for student growth and motivation. When feedback is specific and actionable, it guides students toward improvement. Hattie and Timperley (2023) note that “effective feedback has the power to double the speed of learning by addressing gaps and reinforcing strengths.” Positive reinforcement, when combined with meaningful feedback, helps build pupils' confidence and encourages persistence.

Teachers' Classroom Practices and Pupils' academic performance in Basic Science.

Teachers' classroom practices are fundamental in shaping and enhancing pupils' learning outcomes. Researchers have explored various ways in which effective teaching strategies and practices contribute to improved academic performance, deeper understanding of content, and overall student development.

The focus has been on identifying effective instructional methods, classroom management techniques, and assessment practices that positively impact pupils' learning experiences and achievements. Ogundele (2020), in his study on instructional practices in Nigerian schools, highlights that engaging and interactive teaching methods significantly enhance pupils' learning outcomes. Ogundele defines effective instructional methods as those that actively involve students in the learning process, such as collaborative learning, problem-based learning, and experiential learning. He argues that these methods not only make learning more engaging but also help students develop critical thinking and problem-solving skills. The study shows that when teachers use interactive techniques, students are more likely to participate actively, retain information better, and apply their knowledge in various contexts.

Eze (2023) investigates how assessment practices influence pupils' learning outcomes in Nigerian schools. Eze defines assessment practices as the methods and tools teachers use to evaluate and provide feedback on pupils' learning progress. Her research shows that formative assessments—such as quizzes, group activities, and class discussions—are particularly effective in enhancing learning outcomes. Eze argues that these assessments provide ongoing feedback, allowing students to identify their strengths and areas for improvement. She emphasizes that formative assessments help students adjust their learning strategies and achieve better results over time.

Okafor (2022) complements this view by focusing on the role of feedback in the learning process. His study demonstrates that timely and constructive feedback from teachers helps students understand their mistakes, learn from them, and improve their performance. He highlights that feedback should be specific, actionable, and supportive to be most effective. By incorporating regular feedback into their teaching practices, teachers can help students track their progress, set learning goals, and develop a growth mindset.

Teachers' Classroom Practices and Pupils' Interest in Basic Science.

Afolabi (2021) further emphasizes the role of innovative instructional practices in improving pupils' interest. Her research focuses on the integration of technology in teaching, such as the use of multimedia tools, educational software, and online resources. Afolabi argues that incorporating technology into classroom practices can make learning more dynamic and accessible. By using digital tools, teachers can present information in diverse formats, cater to different learning styles, and provide opportunities for students to engage with content in new and meaningful ways and often show increased motivation and better academic performance.

Chukwuma (2022) explores how effective classroom management contributes to improved learning outcomes. Chukwuma defines classroom management as the strategies and practices teachers use to create a structured and supportive learning environment. A well-managed classroom where students feel respected and valued are more likely to foster positive student behaviour, higher

engagement levels, increases their interest and better academic performance. Teachers who establish a positive and organized classroom atmosphere can effectively reduce disruptions and focus on delivering quality instruction.

Obi (2023) highlights that a well-organized and stimulating classroom environment enhances pupils' concentration and enthusiasm for learning. He argues that classroom practices such as seating arrangements, effective use of space, and the incorporation of visual aids contribute to a positive learning environment. More so, teachers presenting themselves as role model and mentors to their pupils foster more interest in their pupils in them and the subjects they are teaching.

Methodology

The study adopted a descriptive survey research design. The Population for the study comprised all basic science pupils in upper primary schools in Ogun State. Multistage sampling procedure was used to select the sample for the study. In the State, one local government area was selected from each senatorial district in the State. From each selected local government, two primary schools, twenty-five pupils in each were selected using simple random sampling technique, totalling 50 pupils per local government and 150 in all. Achievement Test in Basic Science (ATBAS) was designed to assess the effect of teachers' classroom practices in basic science. Collected data were analyzed using frequency counts and mean difference.

Results

Research One: Do teachers' classroom practices affect pupils' interest in basic science?

Table 1

INTERVAL (Scores)	X	F	FX	Mean
1-5	3	5	15	
6-10	8	55	440	
11-15	13	40	520	12.5
16-20	18	50	900	
Total		150	1875	

N=150

Results in Table 1 showed the descriptive analysis of teachers' classroom practices as it affect interest in Basic Science with mean score($x = 12.5$) in the achievement test. The mean score obtained shows that adherence to teachers' classroom practices is low, thus, has effects on pupils learning outcome in basic science.

Research Two: To what extent do teachers' classroom practices improve pupils' academic performance in basic science?

Table 2

INTERVAL	X	F	FX	Mean
1–5	3	0	0	
6–10	8	0	0	
11–15	13	45	585	16.5
16–20	18	105	1890	
Total		150	2475	
N=150				

Results in Table 2 showed the descriptive analysis of the extent that teachers' classroom practices do affect and improve pupils' academic performance in basic science with mean score($x = 16.5$) in the achievement test. The differences in the mean scores of 12.5 and 16.5 shows that teachers' classroom practices statistically improve the learning outcome in basic science.

Discussion of the Findings

The result of the findings established positive impact of the teachers' classroom practices on (active learning, differentiated instruction, formative assessment, and collaborative learning, pupil learning outcome was moderate and varied) on pupils' interest in basic science. This is in line with the submission of Ojo & Olaniyan (2018), effective classroom practices involve the use of diverse teaching methods that cater to different learning styles and the application of continuous assessment techniques.

The findings established that student-cantered, interactive learning and feedback-oriented instructional methods ensured by healthy teachers' classroom practices enhances pupil engagement, address diverse learning needs, and leads to better academic performance. Chukwuma (2022) explores how effective classroom management contributes to improved learning outcomes.

Conclusion

The study concluded that pupils interest and academic performance in basic science can be improved through teachers' classroom practices of active learning, differentiated instruction, formative assessment, and collaborative learning, positive attitude and reinforcement to pupils, good delivery of instructional content and management of classroom activities effectively, thus, brings an improved academic performance in basic science, increases interest in basic science, and inadequate mastery of scientific concepts among pupils', making a strong foundation of science education and the development of scientific literacy.

Recommendations

- I. Teachers should prioritize good classroom practices and strategies such as active learning, inquiry-based learning, and collaborative learning to enhance pupil engagement and understanding in basic science.
- ii. Regular training programs should be organized for teachers to enhance their skills in implementing innovative classroom practices.
- iii. Teachers should ensure classroom practices that will increase interest of pupils' in basic science

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