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Teachers' effectiveness in using 21st century teaching strategies in Gwagwalada Area Council, Abuja Nigeria

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A B S T R A C T

This study examined teachers' effectiveness in using 21st-century teaching strategies in Gwagwalada Area Council, Abuja, Nigeria. The research was motivated by the need to address gaps in instructional practices caused by the persistence of traditional teacher-centered approaches in an era that demands creativity, collaboration, problem-solving, inclusivity, and digital proficiency. A descriptive survey research design was employed, and a sample of 100 teachers was randomly selected. Data were collected using a validated self-structured questionnaire, the Effective Teaching Strategies Questionnaire (ETS-Q), with a reliability coefficient of 0.89. Descriptive statistics and dependent t-test analyses were applied to evaluate the difference between pre-test and post-test results. Findings revealed a significant improvement in teachers' performance, with a mean difference of 15.68 points (representing a 12% increase) after training on effective teaching strategies. This demonstrates that professional development initiatives can enhance teachers' knowledge and competence in applying innovative, student-centered instructional methods. The study concludes that continuous capacity-building programs are essential for equipping teachers with the requisite skills to foster engaging, inclusive, and future-ready classrooms. It recommends periodic training and reinforcement of 21st-century pedagogies to ensure sustainable improvement in teaching effectiveness and student learning outcomes.

Keywords: Educator, Teaching strategies, blended learning, flipped learning, differentiated instructions

1. Introduction

The field of education has undergone profound changes in the 21st century, influenced by rapid technological innovations, globalization, and the growing prioritization of student-centered approaches to teaching and learning. Today's learners face a world characterized by complexity, uncertainty, and interconnectedness, which requires competencies beyond rote memorization or traditional subject mastery (Trilling & Fadel, 2009). As such, the role of the modern educator has expanded; teachers are no longer seen merely as dispensers of knowledge but as facilitators of learning, mentors who nurture holistic growth, and innovators who incorporate diverse resources to prepare students for lifelong success (Partnership for 21st Century Learning, 2019). This paradigm shift demands that educators adopt pedagogical practices that foster creativity, collaboration, problem-solving, and digital literacy, skills increasingly considered essential for the global knowledge economy (Voogt & Roblin, 2012).

Effective 21st-century teaching strategies include the integration of technology to personalize instruction, the application of project-based and inquiry-based learning methods, and the cultivation of reflective and critical thinking skills (Saavedra & Opfer, 2012). Educators are also expected to build inclusive environments that respect cultural diversity while promoting equity and accessibility in learning opportunities, through effective teacher-student relationships (UNESCO, 2015, Apeh & Nteh, 2024). Furthermore, the emphasis on fostering "lifelong learners" reflects the recognition that students must continually adapt to evolving professional and societal contexts (Darling-Hammond et al., 2020). Ultimately, a 21st-century educator must embody adaptability, empathy, and innovation while employing evidence-based practices that enhance students' engagement and maintain positive attitude toward students (Harrison, Nteh & Zubair, 2022). Thus, teaching has become not only a profession of delivering content but also a mission of shaping competent, ethical, and resilient global citizens.

1. The 21st-century educator embodies several key characteristics that distinguish them from traditional teachers, enabling them to meet the dynamic needs of students and effectively navigate the modern educational landscape (Trilling & Fadel, 2009; Darling-Hammond et al., 2020).

2. Adaptability and Innovation are crucial, as modern educators must remain flexible and open to change. With technological advancements rapidly reshaping education, teachers are required to continuously adjust instructional practices and experiment with innovative strategies (Saavedra & Opfer, 2012; Zhao, 2012).

3. Technological proficiency is equally essential. Digital literacy is now considered a baseline competency for educators, who must skillfully employ learning management systems, interactive digital platforms, and emerging tools such as AI to enhance engagement and personalization (Voogt & Roblin, 2012; UNESCO, 2015).

4. A student-centered approach is another defining feature of contemporary teaching. The emphasis has shifted from teacher-led lecturing to student-driven learning that encourages inquiry, autonomy, and active engagement (Partnership for 21st Century Learning [P21], 2019; Mishra & Koehler, 2006).

5. Moreover, 21st-century instructors must demonstrate cultural awareness and inclusivity. With classrooms more diverse than ever, fostering equitable participation and respecting cultural identities are essential in promoting global readiness (Gay, 2018; Banks & Banks, 2019).

6. Educators also play an important role in advocating for critical thinking and problem-solving, equipping learners to navigate uncertainty and address authentic, real-life challenges (Saavedra & Opfer, 2012; Fullan & Langworthy, 2014).

7. Finally, strong collaboration and communication skills remain indispensable. Building partnerships with families, colleagues, and communities enhances learning outcomes and supports systemic educational improvements (Hargreaves & Fullan, 2012; Darling-Hammond et al., 2020). More so, it will help to reduce antisocial behaviours of students as a result of collaborations (Nteh, Effiong & Josiah, 2024).

8. Collectively, these attributes illustrate that the educator of today is not merely an instructor but a mentor, innovator, and global change agent committed to preparing students for lifelong learning in a complex world.

To thrive in the modern educational environment, educators must implement teaching strategies that align with contemporary learning needs rather than imposing choices on the learners by using question tag such as *"isn't it"*, knowing fully that the answer to the question is "*it is*" even when it is not. The following strategies have been proven effective in enhancing learners' engagement and academic success, thus, blended learning, project-based learning (PBL), flipped classroom, gamification, differentiated instruction, inquiry-based learning, collaborative learning, technology integration, formative assessment & feedback and social-emotional learning (SEL).

1. Blended Learning

Blended learning combines traditional face-to-face instruction with digital resources and online learning activities. This approach allows students to learn at their own pace while benefiting from personalized instruction. Platforms like Google Classroom, Moodle, and Edmodo support blended learning by providing interactive and collaborative tools for students and teachers.

2. Project-Based Learning (PBL)

Project-based learning encourages students to explore real-world problems and develop solutions through research, collaboration, and critical thinking. Instead of passively absorbing information, students engage in hands-on projects that require them to apply their knowledge creatively. This approach fosters deeper understanding and retention of concepts.

3. Flipped Classroom Approach

The flipped classroom model reverses traditional teaching by allowing students to review instructional materials (videos, readings, podcasts) at home and engage in discussions, problem-solving, and hands-on activities in class. This strategy shifts the focus from passive learning to active engagement, maximizing classroom time for meaningful interactions.

4. Gamification in Education

Integrating game elements such as rewards, challenges, and leaderboards into the learning process makes education more engaging and interactive. Gamification motivates students by turning learning into an enjoyable experience. Tools like Kahoot! Quizizz, and Classcraft help educators implement gamified learning in various subjects.

5. Differentiated Instruction

Every student learns differently, and a one-size-fits-all approach may not be effective. Differentiated instruction involves tailoring teaching methods, materials, and assessments to meet individual student needs. Teachers can modify content, process, and product based on students' abilities and learning preferences.

6. Inquiry-Based Learning

Inquiry-based learning encourages students to ask questions, explore topics, and develop their own understanding of concepts. Instead of simply providing answers, educators guide students in investigating issues, conducting research, and formulating their own conclusions. This method enhances curiosity, creativity, and independent thinking.

7. Collaborative Learning

Collaboration is a key skill in the modern workforce. Encouraging students to work in groups fosters teamwork, communication, and problem-solving skills. Strategies such as think-pair-share, group projects, and peer reviews create an interactive learning environment that promotes knowledge-sharing and social development. Bularafa, Mustapha, Saidu, and Shehu, (2024). suggest that the interactive approach is a more effective method for enhancing speaking skills compared to traditional approaches.

8. Technology Integration

Technology plays a crucial role in modern education. Incorporating digital tools such as interactive simulations, virtual reality, and artificial intelligence enhances learning experiences. Platforms like Zoom, Microsoft Teams, and Google Meet facilitate remote and hybrid learning, making education accessible beyond physical classrooms.

9. Formative Assessment and Feedback

Continuous assessment helps educators track student progress and adjust instruction accordingly. Formative assessments such as quizzes, reflections, and peer evaluations provide valuable feedback that guides student improvement. Instant feedback through digital platforms ensures timely intervention and support.

10. Social-Emotional Learning (SEL)

Beyond academic achievement, educators must support students' social and emotional well-being. SEL strategies focus on building self-awareness, empathy, and emotional regulation (Apeh & Nteh, 2024). Teachers can integrate mindfulness activities, discussions on emotional intelligence, and conflict resolution techniques to create a supportive learning environment.

The role of the 21st-century educator extends beyond traditional teaching methods. Modern educators must be adaptable, technologically proficient, and committed to fostering critical thinking, collaboration, and inclusivity. By implementing effective teaching strategies such as blended learning, project-based learning, and technology integration, teachers can create dynamic and engaging learning environments that prepare students for the future. Education continues to evolve, and the success of 21st-century teaching lies in embracing change, leveraging innovation, and prioritizing student-centered learning.

Statement of the Problems

Education in the 21st century has been significantly transformed by technological advancements, globalization, and the increasing demand for student-centered learning. This new reality requires learners to be equipped with competencies such as creativity, critical thinking, collaboration, problem-solving, and digital literacy, which go beyond mere memorization or mastery of content. Consequently, the role of the teacher is no longer restricted to delivering knowledge, but has expanded to that of a facilitator, mentor, and innovator who prepares students for lifelong learning and participation in a complex and interconnected world.

Despite these expectations, traditional methods of teaching remain dominant in many classrooms. This creates a gap between what is required for 21st-century competence and what is actually being practiced. Many educators struggle with adaptability and innovation, often finding it difficult to adjust their methods to match the pace of technological and pedagogical change. Furthermore, digital proficiency, which has become a core skill for effective instruction, remains limited in several educational contexts due to insufficient training, inadequate resources, and lack of institutional support.

Another challenge is the diversity of today's classrooms. Teachers are increasingly faced with the need to create culturally inclusive environments that promote equity, yet many still find it difficult to effectively engage diverse learners or address their unique needs. In addition, while education now emphasizes the importance of fostering lifelong learners who can solve real-world problems, teacher-centered practices that prioritize content delivery continue to dominate in many contexts. These gaps present a significant problem for modern education.

Without teachers who can embody the essential qualities of adaptability, technological proficiency, inclusivity, collaboration, and problem-solving advocacy, schools will struggle to adequately prepare learners for the demands of the 21st century. The challenge, therefore, is how to ensure that educators not only recognize but effectively practice the competencies and strategies required to enhance student learning outcomes and create more inclusive, engaging, and future-oriented classrooms.

The following questions are raised to guide the research:

1. what is the difference between pretest and posttest of teachers in the use of modern teaching strategies in Gwagwalada Area Council of FCT, Abuja Nigeria?

The following hypothesis was used to guide the study:

$H_0$1: There is no significant difference between pretest and posttest of teachers in the use of modern teaching strategies in Gwagwalada Area Council of FCT, Abuja Nigeria.

Methodology

This study employed a descriptive survey research design to examine the subject under investigation. Using a simple random sampling technique, teachers were selected from various schools in the Gwagwalada Area Council of the Federal Capital Territory (FCT), Abuja, Nigeria. Although the overall population of teachers was not precisely known, a sample size of 100 teachers was drawn for the purpose of the study. Data collection was carried out with a self-structured questionnaire titled Effective Teaching Strategies Questionnaire (ETS-Q), consisting of 20 items. The ETS-Q was validated for both face and content validity by experts, and its reliability coefficient was 0.89, established through the internal consistency method.

The administration of the questionnaire was carried out directly by the researchers on the respondents to ensure clarity of instructions and a high rate of retrieval. For the purpose of analysis, descriptive statistics such as frequency counts, mean scores, and percentages were employed to summarize the demographic characteristics of participants and to provide answers to the stated research questions. Furthermore, the study's hypotheses were tested using the independent samples t-test to determine significant differences where applicable. All statistical computations and analyses were conducted with the aid of the Statistical Package for the Social Sciences (SPSS), ensuring accuracy and reliability of results.

Results

This study presents an analysis of pre-test and post-test results from Gwagwalada, Abuja, Nigeria. The analysis utilizes a dependent t-test to determine the statistical significance of the observed differences between pre-test and post-test scores. The findings are expected to provide insights into the effectiveness of professional development initiatives in improving teaching practices and classroom management in educational settings.

Table 1: t-test on the difference in pre-test and post-test performance of participants of a Two-Day Professional Development Programme on Effective Teaching and Classroom Management at SOS Children's Village Gwagwalada, Abuja Nigeria

Tests	Number	Mean	S. D	Mean Difference	t-value	df	Sig(2-tailed)	Decision
Pre-test	44	53.18	14.867	15.68	-7.914	43	.000	Significant
Post-test	44	68.86	15.396					

The analysis in Table 1 was carried out to test the difference in pre-test and post-test performance of participants on effective use of 21st century teaching methods in Gwagwalada, Abuja Nigeria. With the significant values of 0.000 (less than the 0.05 level of significance), it is therefore concluded that there is a significant difference in the performance of participants. The mean scores of the participants, the mean difference of 15.68, shows that the knowledge of the participants increased by 12% after training. To further explain the differences in the mean score, a pie chart is presented in Fig 1.

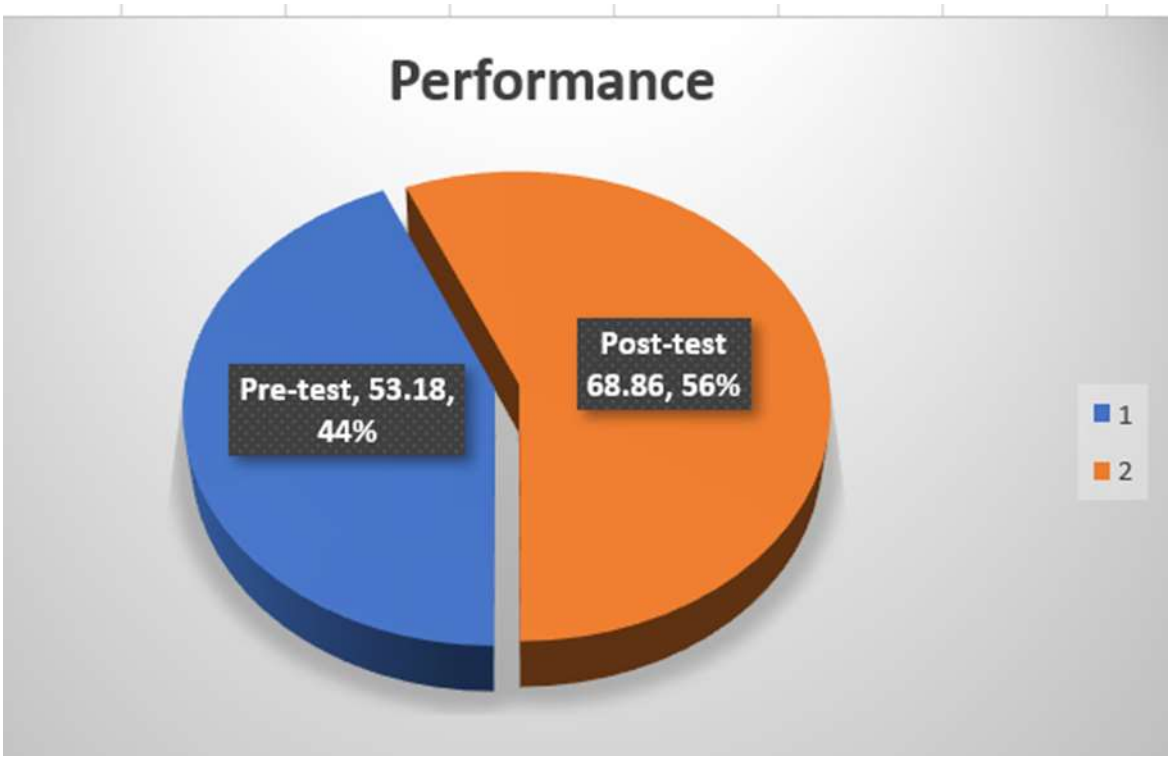

Fig. 1: A pie chart on the difference between pre-test and post-test.

Based on the findings, it is therefore recommended that similar programmes should be organized periodically to ensure that the participants gain mastery of modern teaching techniques and classroom management in the 21st century.

Discussion of Findings

The study revealed a mean difference of 15.68, representing a 12% increase in knowledge after training, indicating that the intervention had a positive effect on participants' learning outcomes. This improvement suggests that the training successfully enhanced participants' understanding of the subject matter, leading to higher post-test scores compared to pre-test scores.

This result is consistent with the findings of Adeoye and Oke (2020), who reported that structured training interventions significantly improved students' knowledge and skills in computer-based assessments. Similarly, Ebo and Opoku-Asare (2022) found that targeted training and psychological support programs were effective in reducing test anxiety and increasing academic performance among secondary school students.

The 12% gain further supports the assertion by Duckworth and Yeager (2018) that well-designed educational programs foster not only knowledge acquisition but also learners' confidence and motivation. From a theoretical perspective, the finding aligns with constructivist learning theory, which emphasizes that learners actively construct knowledge through guided interaction and engagement (Creswell, 2018). Additionally, it reflects Bandura's (1997) social learning theory, which highlights the role of guided practice and modeling in knowledge improvement.

The practical implication of this finding is that training programs can serve as effective capacity-building strategies for learners with limited baseline knowledge. This aligns with Brookhart (2020), who emphasized the importance of formative and structured interventions in closing knowledge gaps and improving performance. However, while the improvement is significant, it may not indicate mastery. Continuous reinforcement and follow-up sessions are necessary to sustain knowledge gains, as suggested by Cassady and Boseck (2019), who observed that repeated interventions tend to produce more enduring academic benefits.

In summary, the finding that participants' knowledge increased by 15.68 points (12%) after training demonstrates the effectiveness of the intervention in enhancing learning outcomes. It corroborates previous research on the positive impact of structured training programs and underscores the importance of sustained instructional support for long-term knowledge retention.

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