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INNOVATING WITHIN CONSTRAINTS: BASIC SCHOOL TEACHERS' EXPERIENCES WITH PEDAGOGICAL REFORM IN GHANA

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ABSTRACT

Ghana's adoption of a standards-based curriculum grounded in 21st-century pedagogy presents a paradox: while teachers are trained in innovative, learner-centered methods, the classrooms they inhabit remain largely rigid, overcrowded, and under-resourced. This study investigates how basic school teachers navigate these tensions, implementing pedagogical innovations in traditional classroom environments. Using a parallel convergent mixed-methods design, the study engaged 97 basic school teachers through electronic surveys and in-depth interviews. Anchored in Rogers' Diffusion Innovation Theory, the study reveals that while pedagogical innovation is taking root at the cognitive and attitudinal levels, its full realization is obstructed by contextual constraints. The findings underscore the need for systemic reform beyond curriculum change, including infrastructure development and targeted teacher support. The study calls on educational policymakers to align pedagogical reforms with investments in physical learning environments to ensure sustainable and equitable educational transformation.

Keywords: innovative pedagogy, standards-based curriculum, basic education, pedagogic reform

INTRODUCTION

Pedagogical practices in the 21st century have undergone significant transformations (Gyawali & Mehndroo, 2023; Siregar, 2020). Central to this paradigm shift is the demand for innovative pedagogies. As defined by Paniagua and Istance (2018), these pedagogies emphasize learner engagement, critical thinking, and collaboration. They capitalize on students' innate tendencies such as curiosity, creativity, and playfulness, while anchoring learning experiences in relevance and authenticity (Paniagua & Istance, 2018). According to Benade (2020), these instructional practices seek to transcend the superficial goal of academic achievement, instead cultivating skills essential for lifelong learning, adaptability, and problem-solving.

However, the adoption of innovative pedagogies is not without challenges. In resource-constrained regions like Sub-Saharan Africa, where public schools often grapple with limited infrastructure and teacher training deficits, the scalability and sustainability of such approaches become critical concerns (Hassler et al., 2018). Effective implementation requires significant investments in teacher capacity building, infrastructural upgrades, and the creation of enabling environments that support innovative instructional practices. Without such systemic and holistic support, their transformative potentials are likely to remain unrealized.

The misalignment between traditional classroom environment and the foundational principles of innovative pedagogy presents a significant obstacle to their successful adoption (Aldhilan et al., 2024). French et al. (2020) posit that the lack of congruence between pedagogical approaches and classroom design disrupts progress toward achieving optimal teaching practices. This perspective is grounded in the understanding of schools as complex adaptive systems, wherein the physical learning environment constitutes a critical element of effective instructional delivery. Traditional classrooms, characterized by rigid structures, teacher-centered instruction, and an overreliance on rote memorization, often lack the technological infrastructure, adaptive tools, and dynamic spatial arrangements needed to facilitate critical thinking, problem-solving, and interactive learning experiences (Paniagua & Istance, 2018).

Despite the numerous educational reforms implemented over the years, Ghana's educational system have long remained deeply entrenched in traditional approaches to teaching and learning (Cobbold, 2017). The reforms, often designed to refine instructional practices and align them with current pedagogical trends, have not succeeded much in dislodging the dominance of teacher-centered methodologies. Research have established that pre-tertiary schools in Ghana are characterized by large class sizes leading to overcrowding, row-column type of seating arrangement pointing towards a single board, over-emphasis on standardized assessment promoting teaching to the test, high teacher to student ratio, all of which provide breading grounds for entrenched traditional classroom environments (Ananga & Tamanja, 2017; Bekoe, 2023).

Similarly, the National Council for Curriculum and Assessment (NaCCA) (2018) identifies deep-rooted challenges within Ghana's education system, which for years adhered to the demands of an objective-based curriculum. According to them, this model emphasized rote learning and passive knowledge acquisition over the development of critical thinking and cross-disciplinary skills. It entrenched a classroom environment where teachers held sole authority, and students were passive

recipients of information. The emphasis on content delivery reinforced a static educational framework that neglected the development of essential soft skills and active learning, which are vital for success in a rapidly changing world. As a result, the objective-based curriculum facilitated basic knowledge retention but severely limited students' ability to engage meaningfully with the curriculum and apply their knowledge in real-world contexts. In response to these challenges, the recent curriculum reform in Ghana seek to transition from the objective-based model to the standards-based approach which prioritizes the development of transferable skills through innovative pedagogical approaches (Addai-Mununkum & Setordzi, 2023; NaCCA, 2018).

However, the successful implementation of the pedagogical innovations inherent in the new standards-based curriculum are at risk due to the stark disconnect between the innovations and the conventional physical infrastructure in public basic schools. While Ghana has made significant strides in transitioning its pre-tertiary curriculum to a learner-centered paradigm, the failure to modernize classroom environments that still rely heavily on traditional, and rigid setups presents a significant obstacle. Without adapting the physical spaces in which teaching and learning occur, the innovative pedagogical approaches outlined in the new curriculum may struggle to gain traction, leaving the educational system caught between the old and the new.

This challenge resonates with Kliebard's (1988, p. 21-22) assertion, as cited in Bekoe (2006), that "when a curriculum change is introduced without due regard for a modification of the context in which the change is to take place, that innovation is almost surely doomed to a short life." It is therefore essential to examine the experiences of basic school teachers who must navigate this dissonance between pedagogical innovations and the physical realities of their teaching environments. This study provides insights that bridge the gap between curriculum expectations and practical implementation, ensuring that innovative pedagogies can take root and meaningfully contribute to enhancing the quality of teaching and learning in Ghana's basic schools. Thus, the study was guided by the following research questions:

1. What is the level of awareness among basic school teachers regarding the innovative teaching methods introduced in the new subject curriculum?
2. How do basic school teachers implement innovative teaching methods in traditional classroom settings?

THEORETICAL FRAMEWORK

This study is grounded in Rogers' Diffusion of Innovation Theory (Rogers, 2003), which provides a lens for understanding how basic school teachers in Ghana adopt innovative teaching methods within traditional classroom contexts. The theory explains how new practices spread over time, influenced by both individual choices and contextual factors (Ayodele, 2020; Menzli et al., 2022). Rather than treating Rogers' five stages of adoption; knowledge, persuasion, decision, implementation, and confirmation as sequential, the study interprets them as interrelated conditions that shape teachers' readiness and capacity to adopt innovation. Rogers also outlines five innovation attributes: relative advantage, compatibility, complexity, trialability, and observability (Shanmugam & Shanmugam, 2021) which are used to analyze how features of learner-centered methods affect adoption. For example, perceived difficulty (complexity) and lack of alignment with classroom conditions (compatibility) may hinder adoption, while observable benefits and opportunities to experiment (trialability and observability) can promote it. The framework helps contextualize teacher experiences with Ghana's curriculum reforms.

METHODS

Research Design

Anchored within the pragmatic research paradigm, a parallel convergent mixed-method design was employed, enabling the simultaneous collection and analysis of both numeric and non-numeric data. This design was selected to capitalize on the strengths of both research methods, ensuring a well-rounded and comprehensive understanding of the research problem (Dawadi et al., 2021).

Participants

The participants for this study comprised basic school teachers in their first year of study leave at the University of Education, Winneba, during the 2024/2025 academic year. The focus was specifically on those who were in their first year at the time data was collected in March and April 2025. The University of Education, Winneba admits teachers on study leave from all regions of Ghana. Consequently, the participants in this study represent a geographically diverse and nationally reflective group of public basic school teachers. Prior to commencing their study leave, these teachers were actively involved in implementing the new curriculum. Their recent and practical classroom experiences made their perspectives both relevant and valuable to the aim of this study.

Sampling Procedure

Two distinct sampling techniques were used to align with the mixed-methods approach and ensure effective participant recruitment. For the quantitative component, a simple random sampling technique was applied to select 97 teachers from the membership of the Ghana National Association of Teachers on Campus (GNATOC). This sample size was determined using Yamane's formula with a 10% margin of error. This probabilistic sampling approach was chosen to ensure that every member of the sampling frame had an equal chance of being selected, thereby enhancing the representativeness of the sample. The application of simple random sampling aimed to minimize selection bias, thus enabling the findings to be more generalizable (Turner, 2020).

In contrast, convenience sampling was employed for the qualitative component to select 12 participants. This non-probabilistic sampling technique was chosen for its practicality, as it allowed for the efficient identification and recruitment of individuals who were readily accessible and willing to participate (Stratton, 2021). By focusing on participants with direct experience in the implementation of the new curriculum, this approach ensured that the qualitative data gathered was both relevant and insightful, providing a deeper understanding of the research problem.

Instruments

Data collection was conducted using two instruments: an electronic questionnaire, developed with the assistance of Kobo Toolbox, and in-depth interviews. The process began by contacting randomly selected participants through phone calls to invite them to take part in the study. Upon their acceptance, a link to the electronic questionnaire was sent for completion. Participants who expressed interest in contributing to the interviews after responding to the questionnaire were contacted for the next phase of data collection. In-depth interviews were conducted via mobile phone calls to collect additional qualitative data.

Analysis

The numeric data were analyzed using descriptive statistics, while the nonnumeric data underwent thematic analysis. Finally, the findings from both analysis were triangulated to provide a comprehensive and well-rounded interpretation of the results.

Study Quality

To ensure the validity and trustworthiness of findings, the study applied legitimation principles proposed by Onwuegbuzie and Johnson (2006), which are crucial for rigorous mixed-methods research. Three key strategies guided the study's quality assurance: weakness minimization legitimation, paradigmatic mixing legitimation, and sample integration legitimation. Weakness minimization was addressed through data triangulation, where concurrent collection of quantitative and qualitative data allowed the strengths of one method to offset the limitations of the other, enhancing the credibility of inferences. To achieve paradigmatic mixing legitimation, the study was grounded in the pragmatic paradigm, which supports methodological pluralism and the use of diverse tools to address real-world problems. This alignment ensured philosophical coherence across research design and execution. For sample integration legitimation, the study adopted a parallel convergent mixed-methods design, consistent with the dominant-less dominant approach recommended by Onwuegbuzie and Johnson. This integration enabled the development of robust meta-inferences that accurately captured the complexity of the educational context.

FINDINGS

What is the level of awareness of basic school teachers about the innovative teaching methods introduced in the new subject curriculum?

Table 1:

Teachers' Level of Awareness

	M	**SD**
I am aware of the emphasis placed on cooperative and collaborative learning within the new subject curriculum.	3.6	0.5
I am aware that the standards-based curriculum for my subject area promotes project-based learning as a core instructional method.	3.5	0.6
I am certain that experiential learning is a key component of the new subject curriculum.	3.5	0.5
I am aware that the new curriculum mandates the integration of Information and Communication Technology (ICT) in teaching and learning.	3.5	0.6
I am aware that the new subject curriculum advocates for the use of problem-based learning methodologies.	3.4	0.6
I am aware that differentiated instructional methods are recommended within the new subject curriculum.	3.5	0.6
I am aware that scaffolding techniques are recommended for use in the new subject curriculum.	3.4	0.6
I am aware of the integration of community-based learning activities in the new subject curriculum.	3.4	0.7
I am aware that flipped learning is incorporated into the new subject curriculum.	3.1	0.7
I am aware of the integration of inquiry-based learning in the new subject curriculum.	3.5	0.5
Mean of means/ Standard deviation	**3.4**	**0.6**

Source: Field Data (2025)

Decision Rule: M < 2.5= below average ≥ 2.50= above average).

The result presented in Table reveal a generally high awareness of key pedagogical strategies introduced under the standards-based curriculum, with mean scores ranging from 3.1 to 3.6. Cooperative and collaborative learning emerged as the most widely recognized method (M = 3.6, SD = 0.5), closely followed by experiential, project-based, ICT-integrated, and inquiry-based learning, each scoring M ≥ 3.4. This suggests that teacher training and curricular dissemination efforts have effectively foregrounded participatory and technology-enhanced approaches as pedagogical cornerstones. Comparatively, flipped learning (M = 3.1) among the others shows weaker familiarity and greater variability (SD = 0.7), indicating potential gaps in either teacher exposure or comprehension.

However, the spread in standard deviations ranging from 0.5 to 0.7 further suggests that awareness is not uniformly distributed, pointing to disparities that may stem from unequal professional development and implementation support. This uneven awareness is critical. Innovations with higher perceived complexity or less contextual compatibility such as flipped classrooms may struggle to gain traction, even as simpler, more intuitive strategies like group work proliferate. These findings are consistent with Rogers' (2003) theory, which posits that complexity and compatibility are key determinants of an innovation's diffusion.

To triangulate the quantitative data on teacher awareness, qualitative data was analyzed to determine whether self-reported familiarity with innovative pedagogies aligned with the depth and clarity of teachers' verbal accounts. While both strands confirmed general awareness, the qualitative data revealed important divergence especially around the depth, clarity, and applicability of that awareness. The respondents referenced core methods, suggesting a general internalization of the curriculum's pedagogical requirements. However, when asked to explain how these methods are integrated into the curriculum exemplars, almost all of them could not provide detailed examples of their application. Some of the teachers interviewed reiterated:

> *"Okay, the new curriculum is really good because it is child-centered and this is whereby the children are allowed to explore different dimensions. With this new curriculum, the teacher facilitates" [sic].*
>
> *"With the new curriculum, the emphasis is on the learner. So, it deals with teachers using several creative techniques to help student acquire some core competencies" [sic].*
>
> *"Okay, the new curriculum is really good because it is child-centered and this is whereby the children are allowed to explore different dimensions. With this new curriculum, the teacher facilitates"* [sic].
>
> *"Yes, the new curriculum, all it talks about is acquiring skills like critical thinking and problems-solving. That is why it looks at methods like experiential learning, collaboration, and inquiry-based learning"* [sic].

Another teacher admitted:

> *"Okay, talking about that, I have no idea of how those methods have been applied but I know of the various instructions you mentioned"* [sic].

How do basic school teachers implement innovative teaching methods in traditional classroom settings?

Drawing from the quantitative and qualitative data, the findings demonstrate that while teachers are motivated and conceptually prepared to innovate, their experiences with implementation is shaped by three interrelated factors:

1. The rigidity and limitations of physical classroom conditions.
2. Strategic adaptation and selective method use.
3. Motivational resilience despite systemic constraints.

Rigidity and Limitations of Physical Classroom Conditions

Table 2:

Classrooms Condition and Perceived Nature

	n	%
Observed Classroom Conditions		
Desks and chairs are arranged in fixed rows facing the teacher.	70	72.2
The teacher's desk is positioned at the front, with a writing board placed behind or adjacent to it.	43	44.3
Classroom is overcrowded, with desks placed close together, leaving little room for movement.	38	39.2
There is enough space for the teacher to move between desks but limited open space for student engagement.	57	58.8
The classroom relies mainly on chalkboards, whiteboards, and textbooks rather than digital tools like projectors or smart boards.	57	58.8
The walls have minimal decoration, with only a few charts, maps, or a timetable displayed.	63	64.9
Perceived Nature of Classroom Setting		
Purely Traditional	53	54.6
Purely innovative	2	2.1
A mix of more traditional and less innovative elements	28	28.9
A mix of less traditional and more innovative elements	14	14.4

Source: Field Data (2025)

The quantitative results in Tables 2 confirm that a majority of classrooms maintain traditional layouts with 72.2% of teachers reporting fixed desk rows, and 64.9% noting minimal visual aids. Furthermore, over half of the respondents describe their classrooms as lacking digital tools and being overcrowded or inflexible in space usage. When asked to classify their classrooms, 54.6% described them "purely traditional," and only 2.1% identified them as "purely innovative."

These quantitative results are strongly corroborated by interview narratives, which paint a consistent picture of infrastructural inadequacy. Most teachers described their classrooms as structurally misaligned with the demands of the standards-based curriculum. Overcrowding, lack of electricity, inflexible seating arrangements, and insufficient teaching materials were common issues. Even in less populated classrooms, the absence of digital tools and poor physical conditions remained barriers. Collectively, they reported that these conditions made group work, movement-based instruction, and technology integration difficult to execute.

As describe by a teacher:

"In my school, the children are not many but we don't have resources too. The school has chairs, but no electricity and sometimes we struggle to get chalks. There are 20 students in my class yet we still lack resources" [sic].

Another teacher affirmed poor physical conditions:

"So if I should take my classroom, we don't have electricity. In fact, the classroom floor is not cemented and really dusty. The kids sit in rows and columns" [sic].

A third participant added:

"Okay, the classroom setting has four windows. The learners are seated in rows and columns. There is the presence of wall charts, some learning materials, but no electricity" [sic].

Strategic Adaptation and Selective Method Use

The presentation under this themes is organized under three interrelated constructs:

1. Frequently adopted methods
2. Perceived difficulty of implementation
3. Adaptive classroom strategies.

Table 3:

Frequency of Implementation

	M	**SD**
I actively use cooperative and collaborative learning methods to enhance student engagement.	3.5	0.6
I bring project-based learning to life in my subject area, making it a central part of my teaching.	3.3	0.7
I make experiential learning a hands-on experience that connects students with real-world challenges.	3.3	0.6
I integrate Information and Communication Technology (ICT) to create interactive and modern lessons.	2.9	0.6
I challenge students with problem-based learning, helping them solve real problems creatively.	3.3	0.6
I tailor my lessons using differentiated methods to ensure every student's learning style is met.	3.3	0.6
I use scaffolding techniques to guide students through complex concepts, ensuring their success step by step.	3.2	0.6
I bring the community into the classroom through meaningful, community-based learning activities.	3.0	0.6
I spark curiosity and critical thinking by embracing inquiry-based learning in my lessons.	3.3	0.5
Mean of means/ Standard deviation	**3.2**	**0.6**

Source: Field Data (2025)

Scale: 1.00 ≤ M ≤ 1.49 = Never; 1.50 ≤ M ≤ 2.49 = Occasionally; 2.50 ≤ M ≤ 3.49 = Often; 3.50 ≤ M ≤ 4.00 = Very Often.

The numeric data revealed that teachers reported frequent use of a range of innovative teaching methods. As shown in Table 3, the most frequently used method was cooperative and collaborative learning (M = 3.5, SD = 0.6), falling into the "very often" category. Several other methods including project-based learning (M = 3.3), inquiry-based learning (M = 3.3), problem-based learning (M = 3.3), experiential learning (M = 3.3), and differentiated instruction (M = 3.3) were all reported as "often used." ICT integration scored slightly lower (M = 2.9), though still within the "often" range.

Moreover, the interview participants echoed these preferences in the interviews. Many gravitated toward collaborative learning and group activities, citing it as the most realistic, effective, and manageable option in their constrained settings. They described

grouping students to work on projects or assignments as a practical solution that requires minimal physical reorganization and external technology. Some of the teachers claimed that:

> *I use the collaborative learning. They make the class lively and every child wants to participate* [sic].
>
> *With the collaborative, it has help the students to express themselves. They are able to express whatever is in their mind* [*sic*].
>
> *Group learning has helped them to be tolerant of each other. And I can say for a fact that it puts some sort of confidence in them* [sic].

Table 4:

Perceived Difficulty Level

Method	M	SD
Cooperative and Collaborative Learning	3.1	0.8
Project-Based Learning	2.7	0.7
Experiential Learning	3.0	0.6
ICT Integration in Teaching	2.3	0.8
Problem-Based Learning	2.8	0.5
Differentiated Instruction	2.9	0.7
Scaffolding Techniques	2.9	0.6
Community-Based Learning	2.8	0.8
Flipped Learning	2.9	0.6
Inquiry-Based Learning	2.9	0.8
Mean of means/ Standard deviation	**2.8**	**0.7**

Source: Field Data (2025)

Decision Rule: 1.00 ≤ M ≤ 1.49 = Very Easy; 1.50 ≤ M ≤ 2.49 = Easy; 2.50 ≤ M ≤ 3.49 = Difficult; 3.50 ≤ M ≤ 4.00 = Very Difficult.

Despite frequent adoption, most pedagogical methods were perceived as difficult to implement. As presented in Table 4, cooperative and collaborative learning though commonly used was rated as "difficult" (M = 3.1), alongside inquiry-based learning (M = 2.9), experiential learning (M = 3.0), and other approaches. However, during the interviews, several teachers described collaborative learning as the most workable approach, citing its low material demands and its adaptability even within constrained classroom environments. This reveals a divergence between the quantitative and qualitative data.

> *The easiest one would be to put them in groups and give them the work. It is because it does not need any special materials and also get students involved.* [sic].
>
> *"The collaboration, I guess. The class size is not big and the classroom is spacious to put them into groups"* [sic].
>
> *"The collaborative is the easiest because the class is spacious and that is what adopt almost all the time. The use of technology is difficult because the resources are not there"* [sic].

Notably, ICT integration was the only method perceived as "easy" to implement in the survey, with a mean score of 2.3. This perception may reflect the fact that teachers often improvise using personal digital tools such as mobile phones, which may reduce the apparent complexity of integration. However, this quantitative finding contrasts sharply with the interview data. Despite reporting some use of ICT, their accounts reveal that implementation is often limited, inefficient, and burdensome. As some participants explained:

"The use of ICT is difficult. This is because the curriculum requires us to use it but we don't have the materials to use" [sic].

"The use of technology is difficult because the resources are not there" [sic]

"Due to the lack of technological gadgets, instead of making it an interactive class, you become limited to just delivering what you know" [sic].

"It really affects me because sometimes the curriculum require teachers to show a video about disaster or conflict but this is the case I don't even have access to a laptop" [sic].

Table 5:

Teachers' Adaptation Efforts

	N	%
Reorganizing seating into clusters or flexible arrangements to encourage group work and interaction.	82	84.5
Utilizing multi-purpose spaces for activities such as discussions, presentations, and hands-on tasks.	70	72.2
Rearranging teacher-student interactions by circulating around the classroom to provide guidance and engage in discussions.	77	79.4
Incorporating visual aids like posters and digital visuals to simplify complex concepts.	68	70.1
Using personal smart technology such as laptops, smartphones, and projectors to enhance learning.	75	77.3
Adjusting lesson pacing to allocate sufficient time for interactive activities.	70	72.2

Source: Field Data (2025)

Table 5 highlights a variety of classroom adaptation strategies that teachers employ to support innovative teaching within traditional settings. These strategies go beyond instructional content to include changes in classroom layout, interaction, and pacing aimed at fostering active, student-centered learning. The most common adaptation is reorganizing seating to support group work (84.5%). A significant number of teachers (79.4%) also move around the classroom to engage students directly. Additionally, 77.3% use personal digital devices, while 72.2% repurpose classroom space for hands-on activities and adjust lesson pacing to allow deeper engagement. Finally, 70.1% incorporate visual aids like posters and charts to enhance comprehension.

However, the findings from the interview strongly support these quantitative trend, particularly in the area of ICT. In the absence of the ICT tools prescribed by the curriculum, teachers often resorted to improvisation, relying on personal mobile phones to simulate the use of multimedia in instruction. While this demonstrates commitment and creativity, it also highlights the inefficiency and limitations of such workarounds. The use of personal phones to display videos or images was a recurring strategy, though one fraught with practical challenges. As they explained:

"My phone is a small phone with a very small screen so if it is a video that I want to show to the students then, I will have to move from desk to desk" [sic]

"So, sometimes when I use my phone, I have to pass the phone around" [sic]

"We don't have the ICT resources but sometimes I use my phone. It is time wasting and stressful" [sic].

Motivational Resilience despite Systemic Constraints

Despite unfavorable classroom conditions, many teachers demonstrate deep intrinsic **commitment** to reform-oriented teaching, drawing on personal convictions about student growth, engagement, and empowerment.

Table 6:

Motivating Factors

	N	%
The potential to increase student engagement in class activities and discussions	85	87.6
The opportunity to improve students' academic performance	78	80.4
The desire to foster better collaboration among students in group tasks or projects	79	81.4
The aim to encourage greater creativity in students' work	77	79.4
The goal of increasing student responsibility for their own learning	72	74.2
The intention to boost student confidence in asking questions and sharing ideas	76	78.4
The belief that it will improve students' problem-solving and critical thinking skills	78	80.4
The drive to increase student motivation to attend and participate in class	77	79.4

Source: Field Data (2025)

As summarized in Table 6, teachers identified a broad range of motivating factors that influence their willingness to adopt innovative teaching methods even when implementation is difficult. The most cited motivation, endorsed by 87.6% of teachers was the potential to increase students' engagement. The teachers believe that when students are actively involved, they become more curious, expressive, and attentive. This desire to make learning more participatory and meaningful appears to be a powerful internal driver of implementing the pedagogical change. Similarly, 80.4% of respondents viewed innovative methods as a means of improving academic performance and critical thinking, while 81.4% were motivated by the opportunity to promote collaboration among students. These figures reflect teachers' belief that learner-centered methods are not only aligned with curriculum demands but are also instrumental to holistic student development. Other notable motivations included encouraging creativity (79.4%), supporting autonomy and student responsibility (74.2%), and building confidence and classroom participation (78.4%).

DISCUSSION

This study engaged Rogers' (2003) Diffusion of Innovation Theory as a lens to interpret how basic school teachers in Ghana implement innovative pedagogical practices within traditional classroom settings. Rather than merely mapping stages of adoption, the discussion interrogates the contradictions between teacher intent and institutional structures, illuminating the systemic inequities and policy gaps that mediate the diffusion of educational innovation in resource-limited contexts.

Rogers posits that knowledge is the initial and foundational stage of the innovation-decision process. In this study, most teachers demonstrated broad awareness of the instructional methods promoted by Ghana's standards-based curriculum, with a

composite mean score of 3.4 indicating above-average familiarity. These results support earlier findings by Yalley (2022), Mochiah and Adibi (2023), and Laryea (2023), which also report widespread teacher awareness. Yet this promising surface belies a deeper inconsistency. As Kwarteng (2024) and the qualitative results in this study both reveal, many teachers, while aware of the innovations, struggle with practical know-how. Some could list methods but could not describe how they are operationalized in curriculum exemplars. This suggests a fragmentation between principle knowledge and procedural competence, limiting the transition from cognitive awareness to confident implementation.

These findings resonate with Rogers' distinction between awareness and "how-to" knowledge, with the latter being essential for adoption. They also expose a wider policy failure: while curriculum reform has promoted innovative methods, teacher preparation and continuous professional development have not sufficiently equipped teachers to translate theory into practice. This reflects broader structural disconnects between curricular aspirations and institutional readiness. A concern echoed in studies from similar low-resource contexts, such as Ngware et al. (2020) in Kenya and Yusuf and Dada (2021) in Nigeria, where inadequate teacher training undermines implementation fidelity.

The tension becomes more pronounced when teachers attempt to implement innovation within structurally ill-equipped environments. As the study showed, the majority of classrooms remain overcrowded, under-resourced, and configured for passive learning. These conditions directly contradict the pedagogical demands of activity-based, student-centered instruction. In Rogers' terms, the perceived complexity of innovations especially those requiring digital tools or flexible space undermines adoption. Teachers may be persuaded of the value of these methods, but they are simultaneously constrained by physical layouts, lack of electricity, and shortages of basic instructional materials. These findings reinforce the work of Addai-Mununkum and Setordzi (2023) and Nyamekye et al. (2023), who also found that Ghanaian basic school teachers often revert to lecture-based approaches due to such constraints.

Yet, despite these challenges, the study found strong evidence of positive attitudes toward innovation. Many teachers expressed clear motivation to adopt learner-centered strategies not merely out of policy compliance but based on their direct experience of improved student engagement, confidence, and collaboration. This aligns with Rogers' persuasion stage, particularly the concept of perceived relative advantage. Teachers' beliefs in the benefits of innovation often led them to take adaptive measures to approximate the kind of interactive teaching.

CONCLUSIONS AND RECOMMENDATIONS

This study highlights a core paradox in Ghana's basic education reform: while teachers increasingly align with the goals of innovative, 21st-century pedagogy, the traditional classroom environments they work in significantly hinder effective implementation. The findings show that teacher motivation and awareness alone cannot drive transformation without corresponding systemic support. True curricular innovation depends on enabling infrastructure, access to teaching materials, and context-responsive policies.

To bridge this gap, the study recommends a shift in reform focus from prescribing what teachers should do to transforming the conditions that shape what they can do. This includes urgent investments by the Ghana Education Service and Ministry of Education in school infrastructure, electricity, ICT, and learning materials. Additionally,

teachers should be supported to continue adapting creatively within their constraints, as such efforts play a crucial role in sustaining innovation amid systemic challenges.

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